~~L.115.~~

~~X 206.e.~~

B
L.2

EB 9

Encyclopædia Britannica

ENCYCLOPÆDIA BRITANNICA.

Burke. BURKE, EDMUND, a writer, orator, and ſtateſman, was born in Dublin, on the 1ſt January in the year 1730. His father was an attorney, firſt at Limerick, and afterwards in Dublin. Young Burke received the firſt rudiments of his education at Ballytore, in the county of Kildare, under the tuition of Abraham Shackleton, a Quaker of conſiderable celebrity. Committed to the care of a maſter ſo admirably qualified for the important buſineſs of inſtruction, young Burke applied to his ſtudies with commendable aſſiduity, and became one of the numerous examples that might be adduced, to demonſtrate the falſehood of that popular but dangerous maxim, *that young men of genius are always deſtitute of application.*

In this ſeminary he laid the foundation of his knowledge in the languages of antiquity; whence he was hereafter to borrow the elegance of his taſte, and the models and imagery of his eloquence. From this ſource was alſo, moſt probably, derived that love of liberty, which germinating at certain periods in his boſom, ſo often pointed his oratory, inflamed his paſſions, and animated his ſentiments; and which in his beſt days acquired him a reputation almoſt unequalled in our times.

At this reſpectable ſchool ſeveral years of his life were ſpent; and the attachment of the maſter, and the gratitude of the pupil, reflect honour on both. The former lived to ſee his ſcholar attain a conſiderable degree of reputation; and he on his part was accuſtomed to ſpend a portion of his annual viſit to Ireland at Ballytore.

From a provincial ſeminary Edmund was ſent to the univerſity of Dublin. Here, however, he does not appear to have diſtinguiſhed himſelf either by application or talents. His character, as a ſtudent, was merely negative. He exhibited no ſymptoms of early genius, obtained no palms in the academic race, and departed even without a degree. During this period, however, he commenced author. His firſt eſſays, were of a political nature.

Mr Burke now addicted himſelf to other purſuits, particularly logic and metaphyſics; and is ſaid to have planned a refutation of the ſyſtems of Berkeley and Hume. While thus employed in treaſuring up the means of attaining a ſpecies of celebrity, which far different avocations prevented him afterwards from aſpiring to, he was not inattentive to the grand object of obtaining a ſuitable ſettlement in life; for his family was not opulent, and he already panted after independence. He accordingly became a candidate for a vacant chair at the univerſity of Glaſgow. The immediate reaſon of his failure is not directly known; but on this he repaired to the metropolis, and enrolled his name as a ſtudent of the Inner Temple. Burke.

It appears from his ſpeeches, his writings, and his converſation, that he ſtudied the grand outline of our municipal juriſprudence with particular attention; but it may be doubted whether he ever entered into the minutiæ. Indeed the verſatility of his talents, and his avocations, were but little calculated for that dull and plodding circuit which can alone lead to an intimate knowledge of our laws. Beſides, if he had been gifted with the neceſſary application, both time and opportunity were wanting: for it is well known that at this period of his life the "*res anguſta domi*" did not permit the ſtudent to dedicate his attention ſolely to this, or indeed to any other ſingle object.

The exhauſted ſtate of his finances called frequently for a ſpeedy ſupply, and inſtead of peruſing the pages of Bracton, Fleta, Littleton, and Coke, he was obliged to write eſſays, letters, and paragraphs, for the periodical publications of the day. But if theſe purſuits diverted his attention from graver ſtudies, they acquired him a facility of compoſition, and a command of ſtyle and of language, which proved eminently ſerviceable in the courſe of his future life.

His health, however, became at length impaired, and a nervous fever enſued. This circumſtance induced him to call in the aid of Dr Nugent, one of his own countrymen, a medical man whoſe manners were more amiable than his practice was extenſive. This gentleman, who had travelled on the continent, and was an author himſelf, readily diſcovered the ſource of his malady, and, by removing him from books and buſineſs to his own houſe, ſoon effected a cure. That event is ſaid to have been haſtened, if not entirely completed, by a phyſician of another kind; the accompliſhed daughter of his hoſt. This lady was deſtined to become his wife; a circumſtance particularly fortunate for him, as her diſpoſition was mild and gentle, and ſhe continued, through a long ſeries of years, and many viciſſitudes of fortune, to ſoothe and tranquillize paſſions always violent, and often tumultuous.

Our ſtudent ſeems at length to have determined once more to endeavour to diſtinguiſh himſelf as an author,

Burke. thor, and he accordingly took advantage of the death of a celebrated peer to write a work after the manner of that nobleman; in which, by exaggerating his principles, he ſhould be enabled to bring them into contempt: but this effort proved unſucceſsful, for the treatiſe in queſtion was for a long time conſigned to oblivion, and would never have been heard of, had it not been reſuſcitated by his future fame. Another performance made ample amends: his "Eſſay on the Sublime and Beautiful" attracted a high degree of reputation, and acquired him conſiderable celebrity as a man of letters. In addition to the profits of the publication, he is ſaid on this occaſion to have received a preſent from his father of 100l. But his circumſtances muſt have been greatly embarraſſed about this time, as he was obliged to ſell his books; and ſurely nothing but the extremity of diſtreſs could have forced a man of letters to ſuch a meaſure.

The work we have juſt mentioned, having an immediate relation to taſte, excited a deſire in Sir Joſhua Reynolds, even then at the head of his profeſſion, to become acquainted with Mr Burke; and a friendſhip enſued which continued uninterrupted during the life of the painter, and was unequivocally teſtified by a handſome bequeſt in his will. Dr Johnſon alſo ſought and obtained an intimacy with him, and he now became the conſtant frequenter of two clubs, compoſed of ſome of the moſt celebrated men of that day. One of theſe met at the Turk's Head tavern in Gerrard-ſtreet, and conſiſted of the following members: Dr Johnſon, Mr (afterwards Sir Joſhua) Reynolds, Dr Goldſmith, Mr Topham Beauclerc, Dr Nugent, Sir John Hawkins, Mr Bennet Langton, Mr Chamier, Mr Garrick, and Mr Burke.

The other aſſembled at the St James's coffee-houſe, and beſides many of the above, was compoſed of the following members: Mr Cumberland, Dr Douglas biſhop of Saliſbury, Dr Bernard dean of Derry, Mr Richard Burke, Mr William Burke, Mr Hickey, &c. Dr Goldſmith, who was Mr Burke's contemporary at Dublin college, was a member of both, and wrote the epitaphs of thoſe who compoſed the latter. That on Mr Burke has often been praiſed.

Here lies our good Edmund, whoſe genius was ſuch,
We ſcarcely can praiſe it or blame it too much;
Who, born for the univerſe, narrow'd his mind,
And to party gave up what was meant for mankind.
Though fraught with all learning, yet ſtraining his throat
To perſuade Tommy Townſhend to lend him a vote;
Who, too deep for his hearers, ſtill went on refining,
And thought of convincing while they thought of dining;
Though equal to all things, for all things unfit,
Too nice for a ſtateſman, too proud for a wit;
For a patriot too cool; for a drudge diſobedient;
And too fond of the *right*, to purſue the *expedient*.
In ſhort, 'twas his fate, unemploy'd or in place, ſir,
To eat mutton cold, and cut blocks with a razor.

A literary work on a new plan, firſt ſuggeſted in 1750, and by ſome attributed to the Dodſleys, and by others to Mr Burke, became, for ſome time, a conſiderable ſource of emolument to him. This was called the "Annual Regiſter;" a publication that ſoon obtained conſiderable celebrity, and of which he had the ſuperintendance for ſeveral years. Burke.

He was, at length, called off from his literary labours by avocations of a far different kind. A gentleman who afterwards derived the *cognomen* of "ſingle-ſpeech Hamilton," from a celebrated oration, having been appointed ſecretary to the lord-lieutenant of Ireland, invited his friend Mr Burke to accompany him thither; this offer he readily complied with, and although he acted in no public ſtation, and performed no public ſervice while he remained in that country, he was rewarded with a penſion of 300l. per annum, which he ſoon after diſpoſed of for a ſum of money.

On his return to England he amuſed himſelf, as uſual, with literary compoſition. A ſeries of eſſays, written by him in a newſpaper, which, at one time, obtained great celebrity, attracted the notice of the late marquis of Rockingham; and Mr Fitzherbert, a member of parliament, and father of the preſent Lord St Helen's, in conſequence of this circumſtance, introduced him to that nobleman. From this moment he was deſtined to become a public man, and to dedicate his ſtudies, his eloquence, and his pen, to politics.

Lord Rockingham having proved more compliant than the earl of Chatham, the former nobleman was brought into power, and ſeated on the treaſury bench. On this occaſion he ſelected Mr Burke as his private ſecretary, an office of no power and very little emolument, but which naturally leads to both. As it was now neceſſary he ſhould have a ſeat in parliament, although it cannot be ſuppoſed that he was legally qualified in reſpect to property, he applied to Lord Verney, who was patron of Wendover, a borough at that time dependent on him, and principally occupied by his tenants.

Having thus obtained a ſeat in 1765, he prepared to fit himſelf for his new ſituation. He was already provided with all the neceſſary talents, and was only deficient in the forms of buſineſs, and the facility of expreſſing his ſentiments before a public audience. The firſt of theſe was maſtered by ſedulous attention; and as to the ſecond, if we are to give credit to thoſe who pretend to be intimately acquainted with this period of his life, he overcame all difficulties by a previous initiation elſewhere. In ſhort he had acquired celebrity at the "Robinhood," before he attempted to ſpeak in the Britiſh ſenate, and vanquiſhed an eloquent "baker" ere he began to cope with the great orators of the nation.

Holding a confidential place under the Rockingham adminiſtration, he of courſe ſupported all its meaſures. A former miniſtry, anxious to increaſe its influence by means of increaſed impoſts, had conceived the idea of taxing America through the medium of a parliament in which ſhe was not repreſented. Having attempted to carry this into effect by means of the famous ſtamp act, the Americans, alarmed at what they conceived to be a flagrant violation of every principle of the Engliſh conſtitution, made ſuch a ſpirited reſiſtance to the meaſure that it was abandoned, and the Rockingham party readily conſented to the repeal. Under the pretext, however, of vindicating the honour of the crown, they unfortunately propoſed and carried the declaratory Burke.

Burke. claratory act, by means of which, although the original ſcheme had been abandoned, the principle on which it was built was aſſerted anew, and a foundation laid for all the miſeries that afterwards enſued. But if this ſhort-lived adminiſtration deſerved no great credit on this occaſion, it is entitled to conſiderable praiſe on account of other parts of its conduct; for it repealed the cyder act, procured a declaration of the houſe of commons condemning the ſeizure of papers, and a reſolution againſt general warrants. The firſt of theſe afforded great relief to ſuch of the counties as cultivated orchard grounds, and the two laſt ſeemed to be called for by the conduct of their predeceſſors in reſpect to Mr Wilkes.

On retiring from office they, however, did not carry much popularity along with them, as Lord Chatham and his friends, who in ſome meaſure monopolized the public favour, were entruſted with the management of affairs for a ſhort time; and it is extremely probable that they would have ſunk into neglect, had not America been driven into reſiſtance.

It now fell to the lot of Lord North to enforce the ſcheme which the Grenville party had projected, and wiſhed to carry boldly into execution; which the Rockingham adminiſtration had by an unaccountable blunder at once annihilated and recogniſed, and which they afterwards manfully, and at length ſucceſsfully oppoſed.

This forms the moſt brilliant epoch of Mr Burke's life. He was hoſtile to the expulſion of Mr Wilkes; an act which the houſe of commons afterwards reſcinded from its records. On the application of the diſſenters for relief, he took up their cauſe, and expreſſed his reſentment, in very animated terms, againſt that miſguided policy, which permits all thoſe not within the pale of eſtabliſhment to enjoy liberty leſs by right than by connivance. But perhaps the nobleſt part of his conduct conſiſted in his ſteady and uniform oppoſition to the American war, and his marked and declared hoſtility to the abettors of it. His ſpeech againſt the Boſton Port Bill was one of the moſt charming ſpecimens of oratory that had ever been exhibited in the Britiſh ſenate; and on the 19th of April, 1774, on a motion for the repeal of the tea duty, he diſcovered ſuch talents, that an old and reſpectable member exclaimed, "Good God! what a man is this!—How could he acquire ſuch tranſcendent powers?" And when, in reply to another who had ſaid, "That the Americans were our children, and it was horrible to revolt againſt their parent!" the orator uttered the following paſſage, the whole houſe was electrified:—"They are our children, it is true; but when children aſk for bread, we are not to give them a ſtone. When thoſe children of ours wiſh to aſſimilate with their parent, and to reſpect the beauteous countenance of Britiſh liberty, are we to turn to them the ſhameful parts of our conſtitution? Are we to give them our weakneſs for their ſtrength; our opprobrium for their glory; and the ſlough of ſlavery, which we are not able to work off, to ſerve them for their freedom."

The city of Briſtol, the merchants of which had become rich by the commerce with America, were likely to ſuffer by its interdiction. This conſideration alone rendered many of them hoſtile to the proceedings of the miniſtry; but nobler and more exalted motives actuated the boſoms of others, particularly the Quakers, Diſſenters, and other ſectariſts, who were moved by zeal againſt oppreſſion, and a love of liberty imprinted on their minds by a conſtitution which had remained until then inviolate. Gratified by the exertions of Mr Burke in behalf of civil and religious freedom, they put him in nomination for their city, and ſent into Yorkſhire, to requeſt his immediate perſonal attendance. After conſulting with his patron concerning an offer ſo flattering and unexpected, accompanied at the ſame time with aſſurances moſt punctually fulfilled, *that he ſhould be put to no expence whatever*, he immediately ſet out for the weſt of England, and found that no leſs than three candidates had ſtarted before him. The firſt was Lord Clare, afterwards Lord Nugent, one of the former repreſentatives, whoſe unpopularity was ſuch, that he ſoon diſcovered the neceſſity of reſigning all his pretenſions; two, therefore (Mr Cruger and Mr Brickdale), only remained in the field, and the former of theſe, like Mr Burke himſelf, was averſe to a rupture with America. Burke.

The new candidate did not appear on the huſtings until the afternoon of the ſixth day's poll, on which occaſion he addreſſed the electors in a very able ſpeech, admirably calculated for the occaſion. He began by expreſſing a modeſt diffidence of his own abilities, and a high opinion of the important truſt they were aſſembled to confer. He then boldly declared himſelf hoſtile to a conteſt with America, and aſſerted, that England had been rendered flouriſhing by liberty and commerce, the firſt of which was dear to his heart, while the latter had been a favourite object of his ſtudies, both in its principles and details.

This harangue was well received by the electors; the conteſt proved propitious to his wiſhes; and when the ſheriffs had notified, at the cloſe of the poll, that he was elected, he made the moſt brilliant addreſs on the occaſion that had ever been heard within the walls of a city celebrated rather for its opulence than its eloquence.

Mr Burke immediately returned from his new conſtituents to parliament, with increaſed vigour, reputation, and zeal. The earl of Chatham, having failed, notwithſtanding his reputation for wiſdom, in an attempt to adjuſt the troubles of the colonies by means of a conciliatory bill introduced by him into the houſe of peers for that purpoſe, the obſtinacy of the miniſtry now became apparent to every one. This circumſtance, which would have appalled an inferior man, did not, however, diſcourage the member for Briſtol from a ſimilar attempt in another place; and accordingly, March 22. 1775, he brought forward his thirteen celebrated propoſitions, which were intended to cloſe the fatal breach, and heal all the differences between the mother country and her colonies.

His plan, on this occaſion, embraced not only an immediate conciliation, by a repeal of the late coercive acts, but alſo the creation of an independent judicature, and the regulation of the courts of admiralty. The whole, however, was quaſhed by a large majority on the ſide of the miniſter, who moved the previous queſtion.

Burke. Mr Burke had hitherto chiefly diſtinguiſhed himſelf in oppoſition to the meaſures of others; but in 1780, he himſelf ſtood forth as the original author and propoſer of a ſcheme which ſoon engaged the attention of the public, and actually appeared big with the moſt proſperous reſults. When he found miniſters obſtinately perſiſting in a diſaſtrous war, and perceived that the people began to bend beneath the weight of the taxes for its ſupport, it ſtruck him as advantageous on one hand, and political on the other, to diminiſh the public burdens and the number of adherents to the court at the ſame time. Accordingly, on the 11th of February, he brought in a bill "for the regulation of his majeſty's civil eſtabliſhments, and of certain public offices; for the limitation of penſions, and the ſuppreſſion of ſundry uſeleſs, expenſive, and inconvenient places, and for applying the monies ſaved thereby to the public ſervice."

This ſcheme was manifeſtly founded on the late reforms that had taken place in France; for by an edict of the king, regiſtered in the parliament of Paris, it appeared that he had ſuppreſſed no leſs than 406 places in his houſehold by one regulation. The orator, with great judgment, faſtened upon this event, and endeavoured to make uſe of it as an incitement to a ſimilar attempt here; nay he called in national rivalſhip itſelf, by way of an inducement to conſent to this ſacrifice on the part of the crown.

To this bill the minority did not at firſt give much oppoſition. Indeed the mover of it contrived to ſoften thoſe features that appeared harſh to them. Notwithſtanding this, it did not prove ſucceſsful during Lord North's adminiſtration; and when it was at length carried, it was much modified and altered.

Parliament was diſſolved in 1780, but Mr Burke was not re-elected for Briſtol, and this is ſaid to have made a deep impreſſion on the mind of the orator; but this muſt have been obliterated by the important events that ſpeedily enſued; for the miniſter now tottered on the treaſury bench, being abandoned by many of his ſtaunchеſt ſupporters, and but little confident in his own ſchemes, all of which had proved eminently unſucceſsful. The oppoſition, having by this time increaſed to a conſiderable degree, unceaſingly aſſailed him, until at length, March 28. 1782, Lord North aſſured the houſe of commons, that his adminiſtration was at an end.

The day had now arrived when the miniſtry and oppoſition were to change places, and the former to be arrayed in the ſpoils of the latter. Of this rich booty Mr Burke, whoſe ſervices had been ſo conſpicuous in hunting the enemy into the toils prepared for them, had his portion: for he was made a privy counſellor, and inveſted with the lucrative appointment of paymaſter-general of the forces. He was at length now enabled to enforce his plan of political economy, tendered before in vain; and the board of trade, the board of works, the offices of third ſecretary of ſtate, treaſurer of the chamber, cofferer of the houſehold, the lords of police in Scotland, the maſter of the harriers, the maſter of the ſtag hounds, the ſix clerks of the board of green cloth, and the paymaſter of the penſions, were aboliſhed.

At length the reins of government were confided to the hands of the marquis of Lanſdowne, then earl Shelburne; and this event gave ſuch offence to thoſe who wiſhed to place the duke of Portland at the head of affairs, that Mr Fox, Lord John Cavendiſh, and Mr Burke, immediately reſigned. Burke.

In the mean time, the critical ſtate of the Engliſh Eaſt India Company had long agitated the public mind, and become occaſionally a ſubject of diſcuſſion in parliament. The ſeizure, impriſonment, and confinement of Lord Pigot, by a faction in the council of Madras; the conduct of Mr Haſtings, in reſpect to ſeveral of the native powers; the grand queſtion of ſovereignty, relative to the territorial poſſeſſions of the company in Aſia: all theſe ſubjects had, at different times, excited the attention of the nation.

No ſooner did Mr Fox behold himſelf and his friends in poſſeſſion of power, than he brought in a bill, to remedy the various abuſes in the government of Britiſh India. Of this bill Mr Burke is well known to have been the principal penman, and upon this occaſion he defended its principles and proviſions with all the zeal of a parent. In a ſpeech of conſiderable length he exhibited an able retroſpect of the ſyſtem, both political and commercial, of the company. He then proceeded to ſtate the benefit likely to reſult from the plan under contemplation, which he conſidered as calculated to effect "the reſcue of the greateſt number of the human race that ever were ſo grievouſly oppreſſed, from the greateſt tyranny that ever was exerciſed." In ſhort, he contemplated it as a meaſure that would "ſecure the rice in his pot to every man in India." "I carry my mind (adds he) to all the people, and all the names and deſcriptions that, relieved by this bill, will bleſs the labours of this parliament, and the confidence which the beſt houſe of commons has given to him who beſt deſerves it."

This celebrated bill, notwithſtanding much oppoſition both within and without, was carried triumphantly through the houſe of commons; but in the houſe of peers it experienced a far different fate, and with it fell the power and conſequence of its authors, framers, and ſupporters.

In the courſe of the next year (February 28. 1785), he made a celebrated ſpeech relative to the nabob of Arcot's debts; and depicted one of his creditors, who had taken an active ſhare in the late elections, "as a criminal who long ſince ought to have fattened the region kites with his offal; the old betrayer, inſulter, oppreſſor, and ſcourge, of a country (Tanjore), which had for years been an object of an unremitted, but unhappily an unequal, ſtruggle, between the bounties of Providence to renovate, and the wickedneſs of mankind to deſtroy."

But there appeared to Mr Burke to be a ſtill greater delinquent, on whom he was determined to inflict all the wounds of his eloquence, and ſacrifice, if poſſible, the powerful offender himſelf at the ſhrine of national vengeance. This was Mr Haſtings; and ſoon after his arrival in England, the orator gave notice of his intentions. On the 17th of February, 1785, he opened the accuſation by a moſt eloquent ſpeech; in which he depicted the ſuppoſed crimes of the late governor-general, in the moſt glowing and animated colours. This trial, however, turned out in the event far

Burke. far different from his hopes and expectations; while the length of it failed not to involve both himſelf and party in reproach.

During the debate on the commercial treaty with France (January 23. 1787), the member for Malton exhibited an undiminiſhed verſatility of talents, and pointed his ridicule with no common ſucceſs at Mr Pitt, who, according to him, contemplated the ſubject with a narrowneſs peculiar to limited minds:—"He ſeems to conſider it (adds he) as an affair of two little compting-houſes, and not of two great nations. He ſeems to conſider it as a contention between the ſign of the *fleur-de-lis* and the ſign of the old *red-lion*, for which ſhould obtain the beſt cuſtom."

The next public event of importance in which we find Mr Burke engaged, occurred in conſequence of his majeſty's indiſpoſition. On this occaſion he took an active part in the debates of the houſe of commons; and is ſuppoſed to have penned a letter for one, and a ſpeech for another, branch of the royal family. When Mr Pitt moved his declaratory reſolutions relative to the proviſional exerciſe of the royal authority, he attacked him with much aſperity of language, and was particularly ſevere on the manner in which the royal aſſent was to be given to all future acts of parliament. The men who held moſt of the high places under the government were treated as "jobbers, old hacks of the court, and the ſupporters and betrayers of all parties; and it was a mock crown, a tinſel robe, and a ſceptre from the theatre, lackered over and unreal," which were about to be conferred on the prince of Wales.

The oppoſition, leſſened indeed by a few occaſional deſertions, had hitherto acted as a great public body, ſuppoſed to be united in general principles, for the common welfare and proſperity of the ſtate; but the French revolution thinned their ranks, diſpelled their conſequence, and, by ſowing jealouſy between the chiefs, ſpread conſternation and diſmay among their followers.

It was on the 2d of March 1790, when Mr Fox moved for leave to bring in a bill to repeal the corporation and teſt-acts, that this diſunion became evident; and ſoon after this Mr Burke declared, "that his honourable friend and he were ſeparated in their politics for ever."

The miniſtry now ſeemed anxious to provide for their new aſſociate; and he, on his part, certainly appeared deſerving of ſome remuneration at their hands, for he had abandoned all his old friends, and not a few of his old principles. In addition to this, his "Reflections on the Revolution in France," had afforded ſome degree of countenance, and even popularity, to the meaſures of adminiſtration; and, not content with his own exertions, he had enliſted his ſon on the ſame ſide, and even ſent him to Coblentz. The royal munificence at length gratified his warmeſt wiſhes; for by a warrant, dated September 24. 1795, and made to commence January 5. 1793, he received a penſion of 1200l. for his own life, and that of his wife, on the civil liſt; while two other penſions of 2500l. a-year for three lives, payable out of the four and a half per cent. fund, dated October 24. 1795, were made to commence from July 24. 1793. Honours as well as wealth now ſeemed to await him, for he was about to be ennobled, when the untimely death of an Burke. only child put an end to his dreams of ambition, and contributed not a little to haſten his own, which occurred at his houſe at Beaconsfield, July 8. 1797.

Thus died, in the 68th year of his age, Edmund Burke, one of the greateſt orators, ſtateſmen, and authors, of his age; one whoſe name will long continue to be celebrated; and who, had he fallen during the meridian of his fame and character, would have ſcarcely been conſidered as ſecond to any man, either of ancient or modern times.

As a man of letters, he ranks high in point of genius, learning, and compoſition; and his works are attended with this peculiarity, that they are the production of almoſt the only orator of his day, who could wield his pen with as much fluency as his tongue, and ſhine equally in the ſenate and the cloſet. His diſſertation on the "Sublime and Beautiful" acquired him the applauſe of all, and ſecured him the friendſhip and aſſiſtance of many men of taſte in the nation. His political tracts betoken much reading, deep thought, uncommon ſagacity; and even thoſe who may be diſpoſed to object to his doctrines, cannot but admire his various talents, his happy alluſions, and his acute penetration. There is no ſpecies of compoſition which he has not attempted; no ſubject on which he has not occaſionally treated: his firſt and his laſt days were equally dedicated to literature, and he diſdained not any ſpecies of it, from the newſpaper column, that ſupplied needful bread to his early youth, to the more elaborate performance that procured unneceſſary opulence to his old age.

As an orator, notwithſtanding ſome glaring defects, he ſtands almoſt unrivalled. His geſticulation was at times violent and repulſive, his manner harſh and overbearing, his epithets coarſe and diſguſting; on many occaſions he made uſe of aſſertions which were not bottomed in fact, and on one in particular, toward the latter end of his life, had recourſe to ſtage trick and pantomime, inſtead of ſenſe and argument. But on the other hand, no man was better calculated to arouſe the dormant paſſions, to call forth the glowing affections of the human heart, and to "harrow up" the inmoſt receſſes of the ſoul. Venality and meanneſs ſtood appalled in his preſence; he who was dead to the feelings of his own conſcience, was ſtill alive to his animated reproaches; and corruption for a while became alarmed at the terrors of his countenance. His powers were never more conſpicuous than on that memorable day on which he expoſed the enormities of a ſubaltern agent of oriental deſpotiſm—on which he depicted the tortures inflicted by his orders, the flagrant injuſtice committed by his authority, the pollution that enſued in conſequence of his ſanction—when he painted agonizing nature vibrating in horrid ſuſpenſe between life and deſtruction—when he deſcribed, in the climax of crimes, "death introduced into the very ſources of life," the boſoms of his auditors became convulſed with paſſion, and thoſe of more delicate organs and weaker frame actually ſwooned away. Nay, after the ſtorm of eloquence had ſpent its force, and the captivated ears no longer liſtened to his voice, his features ſtill ſpoke the purpoſe of his heart, his hand ſtill ſeemed to threaten puniſhment, and his brow to meditate vengeance.

"The

Burkitt ‖ Burleſque.

" The qualities of his heart (ſays one of his biographers) were not leſs amiable and eſtimable than his talents were aſtoniſhing:—benevolent, juſt, temperate, magnanimous. He loved his country, loved its conſtitution, becauſe he believed it the beſt adapted for its happineſs: at different times, from the ſame principle, he ſupported different members of it, when he thought the one or the other likely to be overbalanced. During the prevalence of the Bute plans, dreading the influence of the crown, he ſupported the people; and for the ſame reaſon, during the American war.

" After the overthrow of the French monarchy, the ariſtocracy, and the diſſemination in Great Britain of the principles that had deſtroyed theſe powers, apprehending ſimilar effects, if not vigorouſly oppoſed in England, he ſtrenuouſly ſupported the monarchy and ariſtocracy. Thus diſcriminately patriotic in public life, in his private relations his conduct was highly meritorious. A fond and attentive huſband, an affectionate and judiciouſly indulgent father, a ſincere friend, at once fervid and active, a liberal and kind maſter, an agreeable neighbour, a zealous and bountiful patron, he diffuſed light and happineſs. His principles were as ſtrict, and habits as virtuous, as his diſpoſitions were kind." (*Annual Necrology*).

BURKITT, William, a celebrated commentator on the New Teſtament, was born at Hitcham in Northamptonſhire, July 25. 1650, and educated at Pembroke hall, Cambridge. He entered young upon the miniſtry, being ordained by Biſhop Reynolds: and the firſt employment which he had was at Milden in Suffolk, where he continued 21 years a conſtant preacher, firſt as a curate, and afterwards as rector of that church. In the year 1692, he had a call to the vicarage of Dedham in Eſſex, where he continued to the time of his death, which happened in the latter end of October 1703. He was a pious and charitable man. He made great collections for the French Proteſtants in the years 1687, &c. and by his great care, pains, and charges, procured a worthy miniſter to go and ſettle in Carolina. Among other charities, by his laſt will and teſtament, he bequeathed the houſe wherein he lived, with the lands thereunto belonging, to be a habitation for the lecturer that ſhould be choſen from time to time to read the lecture at Dedham. Beſides his commentary upon the New Teſtament, written in the ſame plain, practical, and affectionate manner in which he preached, he wrote a volume, entitled *The poor man's help, and rich man's guide.*

BURLAW. See *Br-Law.*

BURLEIGH. See Cecil.

BURLESQUE, a ſpecies of compoſition, which, though a great engine of ridicule, is not confined to that ſubject; for it is clearly diſtinguiſhable into burleſque that excites laughter merely, and burleſque that excites deriſion or ridicule. A grave ſubject, in which there is no impropriety, may be brought down by a certain colouring ſo as to be riſible, as in Virgil traveſtie; the author firſt laughs at every turn in order to make his readers laugh. The Lutrin is a burleſque poem of the other ſort, laying hold of a low and trifling incident to expoſe the luxury, indolence, and contentious ſpirit, of a ſet of monks. Boileau, the author, turns the ſubject into ridicule, by dreſſing it in the heroic ſtyle, and affecting to conſider it as of the utmoſt dignity and importance. Though ridicule is the poet's aim, he always carries a grave face, and never once betrays a ſmile. The oppoſition between the ſubject and the manner of handling it, is what produces the ridicule; and therefore, in a compoſition of this kind, no image profeſſedly ludicrous ought to have quarter, becauſe ſuch images deſtroy the contraſt. Burlington ‖ Burnet.

Though the burleſque that aims at ridicule produces its effects by elevating the ſtyle far above the ſubject; yet the poet ought to confine himſelf to ſuch images as are lively, and readily apprehended. A ſtrained elevation, ſoaring above the ordinary reach of fancy, makes not a pleaſant impreſſion. The mind is ſoon diſguſted by being kept long on the ſtretch. Machinery may be employed in a burleſque poem, ſuch as the Lutrin, Diſpenſary, or Hudibras, with more ſucceſs and propriety than in any other ſpecies of poetry. For burleſque poems, though they aſſume the air of hiſtory, give entertainment chiefly by their pleaſant and ludicrous pictures: It is not the aim of ſuch a poem to raiſe ſympathy; and for that reaſon, a ſtrict imitation of nature is not neceſſary. And hence, the more extravagant the machinery in a ludicrous poem, the more entertainment it affords.

BURLINGTON, a ſea-port town in the eaſt riding of Yorkſhire, ſituated on the German ocean, about 37 miles north-eaſt of York. E. Long. 0. 10. and N. Lat. 54. 15. It gave the title of earl to a branch of the noble family of Boyle, but the earldom is now extinct.

New-Burlington, the capital of New-Jerſey, in North America; ſituated in an iſland of Delaware river, about 20 miles north of Philadelphia. W. Long. 74. 0. N. Lat. 40. 40.

BURMAN, Francis, a Proteſtant miniſter, and learned profeſſor of divinity at Utrecht, was born at Leyden in 1628; and died on the 10th of November 1679, after having publiſhed a courſe of divinity, and ſeveral other works.

He is not to be confounded with *Francis Burman*, his ſon; or with *Peter Burman*, a laborious commentator on Phædrus, Lucan, Petronius, and other profane authors, who died in 1741.

BURN, in *Medicine* and *Surgery*, an injury received in any part of the body by fire. See Surgery.

BURNET, Gilbert, biſhop of Saliſbury in the latter end of the 17th century, was born at Edinburgh, in 1643, of an ancient family in the ſhire of Aberdeen. His father being bred to the law, was, at the reſtoration of King Charles II. appointed one of the lords of ſeſſion, with the title of *Lord Crimond*, in reward for his conſtant attachment to the royal party during the troubles of Great Britain. Our author, the youngeſt ſon of his father, was inſtructed by him in the Latin tongue: at ten years of age he was ſent to continue his ſtudies at Aberdeen, and was admitted M. A. before he was 14. His own inclination led him to the ſtudy of the civil and feudal law; and he uſed to ſay, that it was from this ſtudy he had received more juſt notions concerning the foundations of civil ſociety and government, than thoſe which ſome divines maintain. About the year after, he changed his mind, and began to apply to divinity, to the great

ſatisfaction

Burnet. satisfaction of his father. He was admitted preacher before he was 18; and Sir Alexander Burnet, his cousin-german, offered him a benefice; but he refused to accept of it.

In 1663, about two years after the death of his father, he came into England; and after six months stay at Oxford and Cambridge, returned to Scotland; which he soon left again to make a tour for some months, in 1664, in Holland and France. At Amsterdam, by the help of a Jewish rabbi, he perfected himself in the Hebrew language; and likewise became acquainted with the leading men of the different persuasions tolerated in that country; as Calvinists, Arminians, Lutherans, Anabaptists, Brownists, Papists, and Unitarians; amongst each of which he used frequently to declare, he met with men of such unfeigned piety and virtue, that he became fixed in a strong principle of universal charity, and an invincible abhorrence of all severities on account of religious dissensions.

Upon his return from his travels, he was admitted minister of Salton; in which station he served five years in the most exemplary manner. He drew up a memorial, in which he took notice of the principal errors in the conduct of the Scots bishops, which he observed not to be conformable to the primitive institution; and sent a copy of it to several of them. This exposed him to their resentments: but, to show he was not actuated with a spirit of ambition, he led a retired course of life for two years; which so endangered his health, that he was obliged to abate his excessive application to study. In 1669, he published his "Modest and free conference between a conformist and nonconformist." He became acquainted with the duchess of Hamilton, who communicated to him all the papers belonging to her father and her uncle; upon which he drew up the "Memoirs of the dukes of Hamilton." The duke of Lauderdale, hearing he was about this work, invited him to London, and introduced him to King Charles II. He returned to Scotland, and married the lady Margaret Kennedy, daughter of the earl of Cassilis; a lady of great piety and knowledge, highly esteemed by the Presbyterians, to whose sentiments she was strongly inclined. As there was some disparity in their ages, that it might remain past dispute that this match was wholly owing to inclination, and not to avarice or ambition, the day before their marriage our author delivered the lady a deed, whereby he renounced all pretensions to her fortune, which was very considerable, and must otherwise have fallen into his hands, she herself having no intention to secure it. The same year he published his "Vindication of the authority, constitution, and laws of the church and state of Scotland;" which at that juncture was looked upon as so great a service, that he was again offered a bishopric, and a promise of the next vacant archbishopric; but did not accept of it, because he could not approve of the measures of the court, the grand view of which he saw to be the advancement of Popery.

Mr Burnet's intimacy with the dukes of Hamilton and Lauderdale occasioned him to be frequently sent for by the king and the duke of York, who had conversations with him in private. But Lauderdale conceiving a resentment against him on account of the freedom with which he spoke to him, represented at last to the king, that Dr Burnet was engaged in an opposition to his measures. Upon his return to London, he perceived that these suggestions had entirely thrown him out of the king's favour, though the duke of York treated him with greater civility than ever, and dissuaded him from going to Scotland. Upon this, he resigned his professorship at Glasgow, and staid at London. About this time the living at Cripplegate being vacant, the dean and chapter of St Paul's (in whose gift it was), hearing of his circumstances, and the hardships he had undergone, sent him an offer of the benefice; but as he had been informed of their first intention of conferring it on Dr Fowler, he generously declined it. In 1675, at the recommendation of Lord Hollis, whom he had known in France, ambassador at that court, he was, by Sir Herbottle Grimstone, master of the rolls, appointed preacher of the chapel there, notwithstanding the opposition of the court. He was soon after chosen a lecturer of St Clement's, and became one of the preachers that were most followed in town. In 1697, he published his *History of the Reformation*, for which he had the thanks of both houses of parliament. The first part of it was published in 1679, and the second in 1681. Next year he published an abridgment of these two parts. Burnet.

Mr Burnet about this time happened to be sent for to a woman in sickness, who had been engaged in an amour with the earl of Rochester. The manner in which he treated her during her illness, gave that lord a great curiosity for being acquainted with him. Whereupon, for a whole winter, he spent one evening in a week with Dr Burnet, who discoursed with him upon all those topics upon which sceptics and men of loose morals attack the Christian religion. The happy effect of these conferences occasioned the publication of his account of the life and death of that earl. In 1682, when the administration was changed in favour of the duke of York, being much resorted to by persons of all ranks and parties, in order to avoid returning visits, he built a laboratory, and went for above a year through a course of chemical experiments. Not long after, he refused a living of 300l. a-year offered him by the earl of Essex, on the terms of his not residing there, but in London. When the inquiry concerning the popish plot was on foot, he was frequently sent for and consulted by King Charles with relation to the state of the nation. His majesty offered him the bishopric of Chichester, then vacant, if he would engage in his interests; but he refused to accept it on these terms. He preached at the Rolls till 1684, when he was dismissed by order of the court. About this time he published several pieces.

On King James's accession to the throne, having obtained leave to go out of the kingdom, he first went to Paris, and lived in great retirement, till contracting an acquaintance with Brigadier Stouppe, a Protestant gentleman in the French service, he made a tour with him into Italy. He met with an agreeable reception at Rome. Pope Innocent XI. hearing of our author's arrival, sent the captain of the Swiss guards to acquaint him he would give him a private audience in bed, to avoid the ceremony of kissing his holiness's slipper. But Dr Burnet excused himself as well as he could. Some disputes which our author had here concerning religion

Burnet. religion, beginning to be taken notice of, made it proper for him to quit the city; which, upon an intimation given him by Prince Borgheſe, he accordingly did.

He purſued his travels through Switzerland and Germany. In 1688, he came to Utrecht, with an intention to ſettle in ſome of the ſeven provinces. There he received an invitation from the prince and princeſs of Orange (to whom their party in England had recommended him) to come to the Hague, which he accepted. He was ſoon made acquainted with the ſecret of their counſels, and adviſed the fitting out of a fleet in Holland ſufficient to ſupport their deſigns and encourage their friends. This, and the *Account of his Travels*, in which he endeavoured to blend Popery and tyranny together, and repreſent them as unſeparable, with ſome papers reflecting on the proceedings of England, that came out in ſingle ſheets, and were diſperſed in ſeveral parts of England, moſt of which Mr Burnet owned himſelf the author of, alarmed King James; and were the occaſion of his writing twice againſt him to the princeſs of Orange, and inſiſting, by his ambaſſador, on his being forbid the court; which, after much importunity, was done, though he continued to be truſted and employed as before, the Dutch miniſter conſulting him daily. To put an end to theſe frequent conferences with the miniſters, a proſecution for high treaſon was ſet on foot againſt him both in England and Scotland. But Burnet receiving the news thereof before it arrived at the States, he avoided the ſtorm, by petitioning for, and obtaining without any difficulty, a bill of naturalization, in order to his intended marriage with Mary Scott, a Dutch lady of conſiderable fortune, who, with the advantage of birth, had thoſe of a fine perſon and underſtanding.

After his marriage with this lady, being legally under the protection of Holland, when Mr Burnet found King James plainly ſubverting the conſtitution, he omitted no method to ſupport and promote the deſign the prince of Orange had formed of delivering Great Britain, and came over with him in quality of chaplain. He was ſoon advanced to the ſee of Saliſbury. He declared for moderate meaſures with regard to the clergy, who ſcrupled to take the oaths, and many were diſpleaſed with him for declaring for the toleration of nonconformiſts. His paſtoral letter concerning the oaths of allegiance and ſupremacy to King William and Queen Mary, 1689, happening to touch upon the right of conqueſt, gave ſuch offence to both houſes of parliament, that it was ordered to be burnt by the hands of the common executioner. In 1698 he loſt his wife by the ſmallpox; and, as he was almoſt immediately after appointed preceptor to the duke of Glouceſter, in whoſe education he took great care, this employment, and the tender age of his children, induced him the ſame year to ſupply her loſs by a marriage with Mrs Berkely, eldeſt daughter of Sir Richard Blake, knight. In 1699 he publiſhed his Expoſition of the 39 articles; which occaſioned a repreſentation againſt him in the lower houſe of convocation in the year 1701; but he was vindicated in the upper houſe. His ſpeech in the houſe of lords in 1704 againſt the bill to prevent occaſional conformity was ſeverely attacked. He died in 1715, and was interred in the church of St James, Clerkenwell, where he has a monument erected to him. Burnet.

He formed a ſcheme for augmenting the poor livings; which he preſſed forward with ſuch ſucceſs, that it ended in an act of parliament paſſed in the ſecond year of Queen Anne, "for the augmentation of the livings of the poor clergy."

BURNET, *Thomas*, a polite and learned writer in the end of the 17th century, was born in Scotland, but educated in Cambridge under the tuition of Mr John Tillotſon, afterwards archbiſhop of Canterbury. In the beginning of 1685, he was made maſter of Sutton's hoſpital in London, after which he entered into holy orders. During the reign of King James, he made a noble ſtand in his poſt as maſter of the charter-houſe againſt the encroachments of that monarch, who would have impoſed one Andrew Popham, a Papiſt, as a penſioner upon the foundation of that houſe. In 1680 he publiſhed his *Telluris theoria ſacra*, ſo univerſally admired for the purity of the ſtyle and beauty of the ſentiments, that King Charles gave encouragement to a tranſlation of it into Engliſh. This theory was, however, attacked by ſeveral writers. In 1692 he publiſhed his *Archæologia philoſophica*, dedicated to King William, to whom he was clerk of the cloſet. He died in 1715. Since his death hath been publiſhed, his book *De ſtatu mortuorum et reſurgentium*, and his treatiſe *De fide et officiis Chriſtianorum*.

BURNET, the *Honourable James, Lord Monboddo*, a ſenator of the college of juſtice in Scotland, was born about the year 1714. He was the ſon of Mr Burnet of Monboddo in Kincardineſhire. After paſſing through the uſual courſe of ſchool education, he proſecuted his ſtudies at the univerſities of Aberdeen, Edinburgh, and Leyden, with diſtinguiſhed reputation. He was admitted an advocate in 1737, and on the 12th of February 1767, he was raiſed to the bench by the title of Lord Monboddo, in the room of Lord Milton, appointed a judge the 4th of June 1742, and who had ſucceeded Sir John Lauder of Fountainhall, admitted November 1. 1689; being the third on the bench in ſucceſſion ſince the revolution.

He married Miſs Farquharſon, a very amiable woman, by whom he had a ſon and two daughters.

His private life was ſpent in the practice of all the ſocial virtues, and in the enjoyment of much domeſtic felicity. Although rigidly temperate in his habits of life, he, however, delighted much in the convivial ſociety of his friends, and among theſe he could number almoſt all the moſt eminent of thoſe who were diſtinguiſhed in Scotland for virtue, literature, or genuine elegance of converſation and manners. One of thoſe who eſteemed him the moſt was the late Lord Gardenſtone, a man who poſſeſſed no mean portion of the ſame overflowing benignity of diſpoſition, the ſame unimpeachable integrity as a judge, the ſame partial fondneſs for literature and the fine arts. His ſon, a very promiſing boy, in whoſe education he took great delight, was, indeed, ſnatched away from his affections by a premature death. But, when it was too late for ſorrow and anxiety to avail, the afflicted father ſtifled the emotions of nature in his breaſt, and wound up the energies of his ſoul to the firmeſt tone of ſtoical fortitude. He was, in like manner, bereaved of his excellent lady, the object of his deareſt tenderneſs; and he endured the loſs with a ſimilar firmneſs, fitted to do

honour

Burnet. honour either to philoſophy or to religion. In addition to his office as a judge in the court of ſeſſion, an offer was made to him of a ſeat in the court of juſticiary. But, though the emoluments of this would have made a convenient addition to his income, he refuſed to accept it; leſt its buſineſs ſhould too much detach him from the purſuit of his favourite ſtudies. To theſe ſtudies he continued through the whole of a long life to be greatly devoted. His admiration of the manners, literature, and philoſophy of the ancients, was unbounded. Thus ſtrongly prepoſſeſſed, it is not to be wondered at, that the compariſon which he made between the ancients and moderns, was little favourable to the latter. For among the former he ſuppoſed that he ſaw all that was elegant, manly, and virtuous, all that was praiſeworthy and excellent; while the degenerate race of the moderns exhibited nothing but effeminacy and corruption.

The vacation of the court of ſeſſion afforded him ſufficient leiſure to retire every year, in ſpring and in autumn, to the country; and he uſed then to dreſs in a ſtyle of ſimplicity, as if he had been only a plain farmer; and to live among the people upon his eſtate, with all the kind familiarity and attention of an aged father among his grown-up children. Although his eſtate, from the old leaſes, afforded comparatively but a moderate income, he would never raiſe the rents, or diſplace an old tenant to make room for a new one who offered a higher rent. In imitation of the rural economy of ſome of the ancients, whom he chiefly admired, he accounted population the true wealth of an eſtate, and was deſirous of no improvement ſo much as of increaſing the number of ſouls upon his lands, ſo as to make it greater, in proportion to the extent, than that of thoſe upon the eſtate of any neighbouring landholder. It was there he had the pleaſure of receiving Dr Samuel Johnſon, with his friend James Boſwell, at the time when theſe two gentlemen were upon their well-known tour through the Highlands of Scotland. Johnſon admired nothing in literature ſo much as the diſplay of a keen diſcrimination of human character, a juſt apprehenſion of the principles of moral action, and that vigorous common ſenſe which is the moſt happily applicable to the ordinary conduct of life. Monboddo delighted in the refinements, the ſubtleties, the abſtractions, the affectations of literature; and, in compariſon with theſe, deſpiſed the groſſneſs of modern taſte and of common affairs. Johnſon thought learning and ſcience to be little valuable, except ſo far as they could be made ſubſervient to the purpoſes of living uſefully and happily with the world, upon his own terms. Monboddo's favourite ſcience taught him to look down with contempt upon all ſublunary, and eſpecially upon all modern things; and to fit life to literature and philoſophy, not literature and philoſophy to life. James Boſwell, therefore, in carrying Johnſon to viſit Monboddo, probably thought of putting them one againſt another, as two game cocks, and promiſed himſelf much ſport from the colloquial conteſt which he expected to enſue between them. But Monboddo was too hoſpitable and courteous to enter into keen contention with a ſtranger in his own houſe. There was much talk between them, but no angry controverſy, no exaſperation of that diſlike for each other other's well-known peculiarities with which they had met. Johnſon, it is true, ſtill continued to think Lord Monboddo what he called *a prig* in literature. Burnet.

Lord Monboddo uſed frequently to viſit London, to which he was allured by the opportunity that great metropolis affords of enjoying the converſation of a vaſt number of men of profound erudition. A journey to the capital became a favourite amuſement of his periods of vacation from the buſineſs of the court to which he belonged; and, for a time, he made this journey once a year. A carriage, a vehicle that was not in common uſe among the ancients, he conſidered as an engine of effeminacy and ſloth, which it was diſgraceful for a man to make uſe of in travelling. To be dragged at the tail of a horſe, inſtead of mounting upon his back, ſeemed, in his eyes, to be a truly ludicrous degradation of the genuine dignity of human nature. In all his journies, therefore, between Edinburgh and London, he was wont to ride on horſeback, with a ſingle ſervant attending him. He continued this practice, without finding it too fatiguing for his ſtrength, till he was upwards of eighty years of age. Within theſe few years, on his return from a laſt viſit, which he made on purpoſe to take leave, before his death, of all his old friends in London, he became exceedingly ill upon the road, and was unable to proceed; and had he not been overtaken by a Scotch friend, who prevailed upon him to travel the remainder of the way in a carriage, he might, perhaps, have actually periſhed by the way ſide, or breathed his laſt in ſome dirty inn. Since that time, he did not again attempt an equeſtrian journey to London.

In London, his viſits were exceedingly acceptable to all his friends, whether of the literary or faſhionable world. He delighted to ſhew himſelf at court; and the king is ſaid to have taken a pleaſure in converſing with the old man with a diſtinguiſhing notice that could not but be very flattering to him.

A conſtitution of body, naturally framed to wear well and laſt long, was ſtrengthened to Lord Monboddo by exerciſe, guarded by temperance, and by a tenor of mind too firm to be deeply broken in upon by thoſe paſſions which conſume the principles of life. In the country he always uſed much the exerciſes of walking in the open air, and of riding. The cold bath was a means of preſerving the health, to which he had recourſe in all ſeaſons, amid every ſeverity of the weather, under every inconvenience of indiſpoſition or buſineſs, with a perſeverance invincible. He was accuſtomed, alike in winter and in ſummer, to riſe at a very early hour in the morning, and, without loſs of time, to betake himſelf to ſtudy or wholeſome exerciſe. It is ſaid, that he even found the uſe of what he called the air bath, or the practice of occaſionally walking about, for ſome minutes, naked, in a room filled with freſh and cool air, to be highly ſalutary.

Lord Monboddo is well known to the world as a man of letters. His firſt publication was "a Diſſertation on the Origin and Progreſs of Language," in 2 vols. 8vo. 1773; which were followed by four more vols. the laſt publiſhed not long before his death. In this work, intended chiefly to vindicate the honours of *Grecian literature*, he aſcribes the origin of alphabetical writing to the Egyptians; and ſtrenuouſly maintains, that the ouran-outang is a claſs of the human ſpecies, and that his want of ſpeech is merely accidental. He al-

Burnet. so endeavours to eſtabliſh the reality of the exiſtence of mermaids, and other fictitious animals. He was induced to undertake another work, for the purpoſe of defending the cauſe of Grecian philoſophy; and publiſhed, in five vols. 4to. a work entitled, "Antient Metaphyſics," which, like the other, is remarkable for a ſurpriſing mixture of erudition and genius, with the moſt abſurd whim and conceit.

As a judge, his deciſions were ſound, upright, and learned, and marked with acute diſcrimination; and free from thoſe paradoxes and partialities which appear in his writings. He attended his judicial duty with indefatigable diligence till within a few days of his death, which happened at his houſe in Edinburgh, May 26. 1799, at the advanced age of 85.

His eldeſt daughter married ſome years before his death. His ſecond daughter, in perſonal lovelineſs one of the fineſt women of the age, was beheld in every public place with general admiration, and was ſought in marriage by many ſuitors. Her mind was endowed with all her father's benevolence of temper, and with all his taſte for elegant literature, without any portion of his whim and caprice. It was her chief delight to be the nurſe and the companion of his declining age. Her preſence contributed to draw around him, in his houſe, and at his table, all that was truly reſpectable among the youth of his country. She mingled in the world of faſhion, without ſharing its follies; and heard thoſe flatteries which are addreſſed to youth and beauty, without being betrayed to that light and ſelfiſh vanity which is often the only ſentiment that fills the heart of the high-praiſed beauty. She delighted in reading, in literary converſation, in poetry, and in the fine arts, without contracting from this taſte, any of that pedantic ſelf-conceit and affectation which uſually characterize literary ladies, and whoſe preſence often frightens away the domeſtic virtues, the graces, the delicacies, and all the more intereſting charms of the ſex. When Burns, the well-known Scotiſh poet, firſt arrived from the plough in Ayrſhire to publiſh his poems in Edinburgh, there was none by whom he was more zealouſly patronized than by Lord Monboddo and his lovely daughter. No man's feelings were ever more powerfully or exquiſitely alive than thoſe of the ruſtic bard, to the emotions of gratitude, or to the admiration of the good and fair. In a poem which he at that time wrote, as a panegyrical addreſs to Edinburgh, he took occaſion to celebrate the beauty and excellence of Miſs Burnet, in, perhaps the fineſt ſtanza of the whole:

"Thy daughters bright thy walks adorn,
"Gay as the gilded ſummer ſky,
"Sweet as the dewy milk-white thorn,
"Dear as the raptur'd thrill of joy!
"Fair Burnet ſtrikes th' adoring eye;
"Heav'n's beauties on my fancy ſhine,
"I ſee the *Sire of Love* on high,
"And own his work, indeed, divine."

She was the ornament of the elegant ſociety of the city in which ſhe reſided, her father's pride, and the comfort of his domeſtic life in his declining years. Every amiable and noble ſentiment was familiar to her heart, every female virtue was exemplified in her life. Yet, this woman, thus lovely, thus elegant, thus wiſe and virtuous, was cut off in the flower of her age, and left her father bereft of the laſt tender tie which bound him to ſociety and to life. She died about ſix years before him of a conſumption; a diſeaſe that in Scotland proves too often fatal to the loveliеſt and moſt promiſing among the fair and the young. Neither his philoſophy, nor the neceſſary torpor of the feelings of extreme old age, were capable of preventing Lord Monboddo from being very deeply affected by ſo grievous a loſs; and from that time he began to droop exceedingly in his health and ſpirits. *Edin. Mag.* Burnham, Burning.

Burnet. See Poterium and Sanguisorba, Botany *Index*.

BURNHAM, a market-town of Norfolk in England, ſituated in E. Long. 0. 50. N. Lat. 53. 0.

BURNING, the action of fire on ſome pabulum or fuel, by which the minute parts thereof are put into a violent motion, and ſome of them aſſuming the nature of fire themſelves, fly off *in orbem*, while the reſt are diſſipated in form of vapour or reduced to aſhes. See Ignition.

Extraordinary Caſes of Burning. We have inſtances of perſons burnt by fire kindled within their own bodies. A woman at Paris, who uſed to drink brandy to exceſs, was one night reduced to aſhes by a fire from within, all but her head and the ends of her fingers. Signora Corn. Zangari, or, as others call her, *Corn. Bandi*, an aged lady, of an unblemiſhed life, near Ceſana in Romagna, underwent the ſame fate in March 1731. She had retired in the evening to her chamber ſomewhat indiſpoſed; and in the morning was found in the middle of the room reduced to aſhes, all except her face, legs, ſkull, and three fingers. The ſtockings and ſhoes ſhe had on were not burnt in the leaſt. The aſhes were light; and, on preſſing between the fingers, vaniſhed, leaving behind a groſs ſtinking moiſture with which the floor was ſmeared; the walls and furniture of the room being covered with a moiſt cineritious ſoot, which had not only ſtained the linen in the cheſts, but had penetrated into the cloſet, as well as into the room overhead, the walls of which were moiſtened with the ſame viſcous humour.—We have various other relations of perſons burnt to death in this unaccountable manner.

Sig. Mondini, Bianchini, und Maffei, have written treatiſes expreſs to account for the cauſe of ſo extraordinary an event: common fire it could not be, ſince this would likewiſe have burnt the bed and the room; beſides that it would have required many hours, and a vaſt quantity of fuel, to reduce a human body to aſhes; and, after all, a conſiderable part of the bones would have remained entire, as they were anciently found after the fierceſt funeral fires. Some attribute the effect to a mine of ſulphur under the houſe; others, to a miracle; while others ſuſpect that art or villany had a hand in it. A philoſopher of Verona maintains, that ſuch a conflagration might have ariſen from the inflammable matters wherewith the human body naturally abounds. Sig. Bianchini accounts for the conflagration of the lady above-mentioned, from her uſing a bath or lotion of camphorated ſpirit of wine when ſhe found herſelf out of order. Maffei ſuppoſes it owing to lightning, but to lightning generated in her own body, agreeable to his doctrine, which is, That lightning does not proceed from the clouds, but is always produced in the place where it is ſeen and its effects perceived. We

have

Burning. have had a late attempt to eſtabliſh the opinion, that theſe deſtroying internal fires are cauſed in the entrails of the body by inflamed effluvia of the blood; by juices and fermentation in the ſtomach; by the many combuſtible matters which abound in living bodies for the purpoſes of life; and, finally, by the fiery evaporations which exhale from the ſettlings of ſpirit of wine, brandies, and other hot liquors, in the tunica villoſa of the ſtomach and other adipoſe or fat membranes; within which thoſe ſpirits engender a kind of camphor, which in the night-time, in ſleep, by a full reſpiration, are put in a ſtronger motion, and are more apt to be ſet on fire. Others aſcribe the cauſe of ſuch perſons being ſet on fire to lightning; and their burning ſo entirely, to the greater quantity of phoſphorus and other combuſtible matter they contained.—For our own part, we can by no means pretend to explain the cauſe of ſuch a phenomenon: but for the intereſts of humanity we wiſh it could be derived from ſomething external to the human body; for if, to the calamities of human life already known, we ſuperadd a ſuſpicion that we may unexpectedly, and without the leaſt warning, be conſumed by an *internal* fire, the thought is too dreadful to be borne.

Burning, or *Brenning*, in our old cuſtoms, denotes an infectious diſeaſe, got in the ſtews by converſing with lewd women, and ſuppoſed to be the ſame with what we now call the *venereal diſeaſe*.

In a manuſcript of the vocation of John Bale to the biſhopric of Oſſory, written by himſelf, he ſpeaks of Dr Hugh Weſton, who was dean of Windſor in 1556, but deprived by Cardinal Pole for adultery, thus: "At this day is leacherous Weſton, who is more practiſed in the arts of breech-burning, than all the whores of the ſtews. He not long ago brent a beggar of St Botolph's pariſh." See Stews.

Burning, in *Antiquity*, a way of diſpoſing of the dead much practiſed by the ancient Greeks and Romans, and ſtill retained by ſeveral nations in the Eaſt and Weſt Indies. The antiquity of this cuſtom riſes as high as the Theban war, where we are told of the great ſolemnity accompanying this ceremony at the pyre of Menæacus and Archemorus, who were cotemporary with Jair the eighth judge of Iſrael. Homer abounds with funeral obſequies of this nature. In the inward regions of Aſia the practice was of very ancient date, and the continuance long: for we are told, that, in the reign of Julian, the king of Chionia burnt his ſon's body, and depoſited the aſhes in a ſilver urn. Coeval almoſt with the firſt inſtances of this kind in the eaſt, was the practice in the weſtern parts of the world. The Herulians, the Getes, and the Thracians, had all along obſerved it; and its antiquity was as great with the Celtæ, Sarmatians, and other neighbouring nations. The origin of this cuſtom ſeems to have been out of friendſhip to the deceaſed: their aſhes were preſerved as we preſerve a lock of hair, a ring, or a ſeal, which had been the property of a deceaſed friend.

Kings were burnt in cloth made of the aſbeſtos ſtone, that their aſhes might be preſerved pure from any mixture with the fuel and other matters thrown on the funeral pile. The ſame method is ſtill obſerved with the princes of Tartary. Among the Greeks, the body was placed on the top of a pile, on which were thrown divers animals, and even ſlaves and captives, beſides unguents and perfumes. In the funeral of Patroclus we find a number of ſheep and oxen thrown in, then four horſes, followed by two dogs, and laſtly by 12 Trojan priſoners. The like is mentioned by Virgil in the funerals of his Trojans; where, beſides oxen, ſwine, and all manner of cattle, we find eight youths condemned to the flames. The firſt thing was the fat of the beaſts wherewith the body was covered, that it might conſume the ſooner: it being reckoned great felicity to be quickly reduced to aſhes. For the like reaſon, where numbers were to be burnt at the ſame time, care was taken to mix with the reſt ſome of humid conſtitutions, and therefore more eaſily to be inflamed. Thus we are aſſured by Plutarch and Macrobius, that for every ten men it was cuſtomary to put in one woman. Soldiers uſually had their arms burnt with them. The garments worn by the living were alſo thrown on the pile, with other ornaments and preſents; a piece of extravagance which the Athenians carried to ſo great a height, that ſome of their lawgivers were forced to reſtrain them, by ſevere penalties, from defrauding the living by their liberality to the dead.—In ſome caſes, burning was expreſsly forbidden among the Romans, and even looked upon as the higheſt impiety. Thus infants, who died before the breeding of teeth, were intombed unburnt in the ground, in a particular place ſet apart for this purpoſe, called *ſuggrundarium*. The like was practiſed with regard to thoſe who had been ſtruck dead with lightning, who were never to be burnt again. Some ſay that burning was denied to ſuicides.—The manner of burning among the Romans was not unlike that of the Greeks; the corpſe, being brought out without the city, was carried directly to the place appointed for burning it; which, if it joined to the ſepulchre, was called *buſtum*; if ſeparate from it, *uſtrina*; and there laid on the *rogus* or *pyra*, a pile of wood prepared on which to burn it, built in ſhape of an altar, but of different height according to the quality of the deceaſed. The wood uſed was commonly from ſuch trees as contain moſt pitch or roſin; and if any other were uſed, they ſplit it for the more eaſy catching fire: round the pile they ſet cypreſs trees, probably to hinder the noiſome ſmell of the corpſe. The body was not placed on the bare pile, but on the couch or bed whereon it lay. This done, the next of blood performed the ceremony of lighting the pile; which they did with a torch, turning their faces all the while the other way, as if it were done with reluctance. During the ceremony, decurſions and games were celebrated; after which came the *oſſilegium*, or gathering of the bones and aſhes; alſo waſhing and anointing them, and repoſiting them in urns.

Burning, among ſurgeons, denotes the application of an actual cautery, that is, a red-hot iron inſtrument, to the part effected: otherwiſe denominated *cauterization*. The whole art of phyſic among the Japaneſe lies in the choice of places proper to be burnt: which are varied according to the diſeaſe. In the country of the Mogul, the colic is cured by an iron ring applied red-hot about the patient's navel. Certain it is, that ſome very extraordinary cures have been performed accidentally by burning. The following caſe is recorded in the Memoirs of the academy of ſciences by M. Homberg. A woman of about 35 became ſubject to a head-

Burning. ach, which at times was ſo violent that it drove her out of her ſenſes, making her ſometimes ſtupid and fooliſh, at other times raving and furious. The ſeat of the pain was in the forehead, and over the eyes, which were inflamed, and looked violently red and ſparkling; and the moſt violent fits of it were attended with nauſeas and vomitings. In the times of the fits, ſhe could take no food; but out of them, had a very good ſtomach. Mr Homberg had in vain attempted her cure for three years with all kinds of medicines: only opium ſucceeded; and that but little, all its effect being only the taking off the pain for a few hours. The redneſs of her eyes was always the ſign of an approaching fit. One night, feeling a fit coming on, ſhe went to lie down upon the bed; but firſt walked up to the glaſs with the candle in her hand, to ſee how her eyes looked: in obſerving this, the candle ſet fire to her cap: and as ſhe was alone, her head was terribly burnt before the fire could be extinguiſhed. Mr Homberg was ſent for, and ordered bleeding and proper dreſſings: but it was perceived, that the expected fit this night never came on; the pain of the burning wore off by degrees; and the patient found herſelf from that hour cured of the headach, which had never returned in four years after, which was the time when the account was communicated. Another caſe, not leſs remarkable than the former, was communicated to Mr Homberg by a phyſician at Bruges. A woman, who for ſeveral years had her legs and thighs ſwelled in an extraordinary manner, found ſome relief from rubbing them before the fire with brandy every morning and evening. One evening the fire chanced to catch the brandy ſhe had rubbed herſelf with, and ſlightly burnt her. She applied ſome brandy to her burn; and in the night all the water her legs and thighs were ſwelled with was entirely diſcharged by urine, and the ſwelling did not again return.

Burning-Buſh. See Bush.

Burning Glaſs, a convex glaſs commonly ſpherical, which being expoſed directly to the ſun, collects all the rays falling theron into a very ſmall ſpace called the *focus*; where wood or any other combuſtible matter being put, will be ſet on fire. The term *burning-glaſs* is alſo uſed to denote thoſe concave mirrors, whether compoſed of glaſs quickſilvered, or of metalline matters, which burn by reflection, condenſing the ſun's rays into a focus ſimilar to the former.

The uſe of burning-glaſſes appears to have been very ancient. Diodorus Siculus, Lucian, Dion, Zonaras, Galen, Anthemius, Euſtathius, Tzetzes, and others, atteſt, that by means of them Archimedes ſet fire to the Roman fleet at the ſiege of Syracuſe. Tzetzes is ſo particular in his account of this matter, that his deſcription ſuggeſted to Kircher the method by which it was probably accompliſhed. That author ſays, that "Archimedes ſet fire to Marcellus's navy, by means of a burning glaſs compoſed of ſmall ſquare mirrors moving every way upon hinges; which, when placed in the ſun's rays, directed them upon the Roman fleet, ſo as to reduce it to aſhes at the diſtance of a bow ſhot." A very particular teſtimony we have alſo from Anthemius of Lydia, who takes pains to prove the poſſibility of ſetting fire to a fleet, or any other combuſtible body, at ſuch a diſtance.

That the ancients were alſo acquainted with the uſe of catoptric or refracting burning-glaſſes, appears from Burning. a paſſage in Ariſtophanes's comedy of The Clouds, which clearly treats of their effects. The author introduces Socrates as examining Strepſiades about the method he had diſcovered of getting clear of his debts. He replies, that "he thought of making uſe of a burning-glaſs which he had hitherto uſed in kindling his fire;" "for (ſays he) ſhould they bring a writ againſt me, I'll immediately place my glaſs in the ſun at ſome little diſtance from it, and ſet it on fire." Pliny and Lactantius have alſo ſpoken of glaſſes that burn by refraction. The former calls them *balls* or *globes of glaſs* or *cryſtal*, which, expoſed to the ſun, tranſmit a heat ſufficient to ſet fire to cloth, or corrode the dead fleſh of thoſe patients who ſtand in need of cauſtics; and the latter, after Clemens Alexandrinus, takes notice that fire may be kindled by interpoſing glaſſes filled with water between the ſun and the object, ſo as to tranſmit the rays to it.

It ſeems difficult to conceive how they ſhould know ſuch glaſſes would burn without knowing they would magnify, which it is granted they did not, till towards the cloſe of the 13th century, when ſpectacles were firſt thought on. For as to thoſe paſſages in Plautus which ſeem to intimate the knowledge of ſpectacles, M. de la Hire obſerves, they do not prove any ſuch thing; and he ſolves this, by obſerving, that their burning-glaſſes being ſpheres, either ſolid or full of water, their foci would be one-fourth of their diameter diſtant from them. If then their diameter were ſuppoſed half a foot, which is the moſt we can allow, an object muſt be at an inch and a half diſtance to perceive it magnified; thoſe at greater diſtances do not appear greater, but only more confuſed through the glaſs than out of it. It is no wonder, therefore, the magnifying property of convex glaſſes was unknown, and the burning one known. It is more wonderful there ſhould be 300 years between the invention of ſpectacles and teleſcopes.

Among the ancients, the burning mirrors of Archimedes and Proclus are famous: the former we have already taken notice of; by the other, the navy of Vitellius beſieging Byzantium, according to Zonaras, was burnt to aſhes.

Among the moderns, the moſt remarkable burning mirrors are thoſe of Settala, of Villette, of Tſchirnhauſen, of Buffon, of Trudaine, and of Parker.

Settala, canon of Padua, made a parabolic mirror, which, acording to Schottus, burnt pieces of wood at the diſtance of 15 or 16 paces. The following things are noted of it in the *Acta Eruditorum*. 1. Green wood takes fire inſtantaneouſly, ſo as a ſtrong wind cannot extinguiſh it. 2. Water boils immediately; and eggs in it are preſently edible. 3. A mixture of tin and lead, three inches thick, drops preſently; and iron and ſteel plate becomes red-hot preſently, and a little after burns into holes. 4. Things not capable of melting, as ſtones, bricks, &c. become ſoon red-hot, like iron. 5. Slate becomes firſt white, then a black glaſs. 6. Tiles are converted into a yellow glaſs, and ſhells into a blackiſh yellow one. 7. A pumice ſtone, emitted from a volcano, melts into white glaſs; and, 8. A piece of crucible alſo vitrifies in eight minutes. 9. Bones are ſoon turned into an opaque glaſs, and earth into a black one. The breadth of this mirror is near three Leipſic ells, its focus two ells from it; it is made of copper, and

Burning. and its ſubſtance is not above double the thickneſs of the back of a knife.

Villette, a French artiſt of Lyons, made a large mirror, which was bought by Tavernier and preſented to the king of Perſia; a ſecond, bought by the king of Denmark; a third, preſented by the French king to the Royal Academy; a fourth has been in England, where it was publicly expoſed. The effects hereof, as found by Dr Harris and Dr Deſaguliers, are, that a ſilver ſixpence is melted in $7\frac{1}{2}''$, a King George's halfpenny in $16''$, and runs with a hole in 34. Tin melts in $3''$, caſt iron in $16''$, ſlate in $3''$; a foſſil ſhell calcines in $7''$; a piece of Pompey's pillar at Alexandria vitrifies, the black part in $50''$, in the white in $54''$; copper ore in $8''$; bone calcines in $4''$, vitrifies in $33''$. An emerald melts into a ſubſtance like a turquois ſtone; a diamond weighing four grains loſes $\frac{7}{8}$ of its weight: the aſbeſtos vitrifies; as all other bodies will do, if kept long enough in the focus; but when once vitrified, the mirror can go no farther with them. This mirror is 47 inches wide, and is ground to a ſphere of 76 inches radius; ſo that its focus is about 38 inches from the vertex. Its ſubſtance is a compoſition of tin, copper, and tin-glaſs.

Every lens, whether convex, plano-convex, or convexo-convex, collects the ſun's rays, diſperſed over its convexity, into a point by refraction; and is therefore a burning glaſs. The moſt conſiderable of this kind is that made by M. de Tſchirnhauſen: the diameters of his lenſes are three and four feet, the focus at the diſtance of 12 feet, and its diameter an inch and a half. To make the focus the more vivid, it is collected a ſecond time by a ſecond lens parallel to the firſt, and placed in that point where the diameter of the cone of rays formed by the firſt lens is equal to the diameter of the ſecond; ſo that it receives them all; and the focus, from an inch and a half, is contracted into the ſpace of eight lines, and its force increaſed proportionably.

This glaſs vitrifies tiles, ſlates, pumice-ſtones, &c. in a moment. It melts ſulphur, pitch, and all roſins, under water; the aſhes of vegetables, woods, and other matters, are tranſmuted into glaſs; and every thing applied to its focus is either melted, turned into a calx, or into ſmoke. Tſchirnhauſen obſerves, that it ſucceeds beſt when the matter applied is laid on a hard charcoal well burnt.

Sir Iſaac Newton preſented a burning-glaſs to the royal ſociety, conſiſting of ſeven concave glaſſes, ſo placed as that all their foci join in one phyſical point. Each glaſs is about 11 inches and a half in diameter: ſix of them are placed round the ſeventh, to which they are all contiguous; and they form a kind of ſegment of a ſphere, whoſe ſubtenſe is about 34 inches and a half, and the central glaſs lies about an inch farther in than the reſt. The common focus is about 22 inches and a half diſtant, and about an inch in diameter. This glaſs vitrifies brick or tile in $1''$, and melts gold in $30''$.

It would appear, however, that glaſs quickſilvered is a more proper material for burning-glaſſes than metals; for the effects of that ſpeculum wherewith Mr Macquer melted the platina ſeem to have been ſuperior to thoſe above mentioned, though the mirror itſelf was much ſmaller. The diameter of this glaſs was only 22 inches, and its focal diſtance 28. Black flint, when expoſed to the focus, being powdered to prevent its crackling and flying about, and ſecured in a large piece of charcoal, bubbled up and ran into tranſparent glaſs in leſs than half a minute. Heſſian crucibles, and glaſs-houſe pots, vitrified completely in three or four ſeconds. Forged iron ſmoked, boiled, and changed into a vitreſcent ſcoria as ſoon as it was expoſed to the focus. The gypſum of Montmartre, when the flat ſides of the plates or leaves of which it is compoſed were preſented to the glaſs, did not ſhow the leaſt diſpoſition to melt; but, on preſenting a tranſverſe ſection of it, or the edges of the plates, it melted in an inſtant, with a hiſſing noiſe, into a browniſh yellow matter. Calcareous ſtones did not completely melt: but there was detached from them a circle more compact than the reſt of the maſs, and of the ſize of the focus; the ſeparation of which ſeemed to be occaſioned by the ſhrinking of the matter which had begun to enter into fuſion. The white calx of antimony, commonly called *diaphoretic antimony*, melted better than the calcareous ſtones, and changed into an opaque pretty gloſſy ſubſtance like white enamel. It was obſerved, that the whiteneſs of the calcareous ſtones and the antimonial calx was of great diſadvantage to their fuſion, by reaſon of their reflecting great part of the ſun's rays; ſo that the ſubject could not undergo the full activity of the heat thrown upon it by the burning-glaſs. The caſe was the ſame with metallic bodies; which melted ſo much the more difficultly as they were more white and poliſhed; and this difference was ſo remarkable, that in the focus of this mirror, ſo fuſible a metal as ſilver, when its ſurface was poliſhed, did not melt at all. Burning.

Plate CXXXI. fig. 1. repreſents M. Buffon's burning mirror, which he with great reaſon ſuppoſes to be of the ſame nature with that of Archimedes. It conſiſts of a number of ſmall mirrors of glaſs quickſilvered, all of which are held together by an iron frame. Each of theſe ſmall mirrors is alſo moveable by a contrivance on the back part of the frame, that ſo their reflections may all coincide in one point. By this means they are capable of being accommodated to various heights of the ſun, and to different diſtances. The adjuſting them in this manner takes up a conſiderable time; but after they are ſo adjuſted, the focus will continue unaltered for an hour or more.

Fig. 2. repreſents a contrivance of M. Buffon's for diminiſhing the thickneſs of very large refracting lenſes. He obſerves, that in the large lenſes of this kind, and which are moſt convenient for many purpoſes, the thickneſs of the glaſs in the middle is ſo great as very much to diminiſh their force. For this reaſon he propoſes to form a burning-glaſs of concentric circular pieces of glaſs, each reſting upon the other, as repreſented in the figure. His method is to divide the convex arch of the lens into three equal parts. Thus, ſuppoſe the diameter to be 26 inches, and the thickneſs in the middle to be three inches: By dividing the lens into three concentric circles, and laying the one over the other, the thickneſs of the middle piece needs be only one inch; at the ſame time that the lens will have the ſame convexity, and almoſt the ſame focal diſtance, as

Burning. as in the other caſe; while the effects of it muſt be much greater, on account of the greater thinneſs of the glaſs.

M. Trudaine, a French gentleman, conſtructed a burning lens on a new principle. It was compoſed of two circular ſegments of glaſs ſpears, each four feet in diameter, applied with their concave ſides towards each other. The cavity was filled with ſpirit of wine, of which it contained 40 pints. It was preſented by the maker to the royal academy of ſciences, but was, not long after, broken by accident. The expence of conſtructing it amounted to about 1000l. ſterling. After all, it does not appear that the effects of this lens were very great. Mr Magellan informs us, that it could only coagulate the particles of platina in 20 minutes, while Mr Parker's lens entirely melted them in leſs than two.

A large burning lens, indeed, for the purpoſe of fuſing and vitrifying ſuch ſubſtances as reſiſt the fires of ordinary furnaces, and eſpecially for the application of heat in vacuo, and in other circumſtances in which heat cannot be applied by any other means, has long been a deſideratum among perſons concerned in philoſophical experiments: And it appears now to be in a great degree accompliſhed by Mr Parker. His lens is three feet in diameter, made of flint-glaſs, and which, when fixed in its frame, expoſes a ſurface two feet eight inches and a half in the clear.

In the *Elevation* repreſented on Plate CXXXII, A is the lens of the diameter mentioned: thickneſs in the centre, three inches and one-fourth: weight, 212 pounds: length of the focus, ſix feet eight inches; diameter of ditto, one inch. B, a ſecond lens, whoſe diameter in the frame is 16 inches, and ſhows in the clear 13 inches: thickneſs in the centre, one inch five-eighths: weight 21 pounds: length of focus 29 inches: diameter of ditto, three-eighths of an inch. When the two above lenſes are compounded together, the length of the focus is five feet three inches: diameter of ditto, half an inch. C, a truncated cone, compoſed of 21 ribs of wood: at the larger end is fixed the great lens A; at the ſmaller extremity the leſſer lens B: near the ſmaller end is alſo fixed a rack, D, paſſing through the pillar L, moveable by a pinion turning in the ſaid pillar, by means of the handle E, and thus giving a vertical motion to the machine. F, a bar of wood, fixed between the two lower ribs of the cone at G; having, within a chaſed mortice in which it moves, an apparatus H, with the iron plate, I, fixed thereto; and this part turning on a ball and ſocket, K, a method is thereby obtained of placing the matter under experiment, ſo as to be acted upon by the focal rays in the moſt direct and powerful manner. LL, a ſtrong mahogany frame, moving on caſtors, MM. Immediately under the table N are three friction wheels, by which the machine moves horizontally. O, a ſtrong iron bow, in which the lens and the cone hang.

Section. a, The great lens marked A in the elevation. b, The frame which contains the lens. c, The ſmall lens marked B. d, The frame which contains the ſmall lens. e, The truncated cone, marked C. f, The bar on which the apparatus marked F moves. g, The iron plate marked I. h, The cone of rays formed by the refraction of the great lens a, and falling on the lens c. i, The cone of rays formed by the refraction of the lens c, *Front-view.* k, The great lens. l, The frame containing it. m, The ſtrong iron bow in which it hangs. Burning.

From a great number of experiments made with this lens, in the preſence of many ſcientific perſons, the following are ſelected as ſpecimens of its powers.

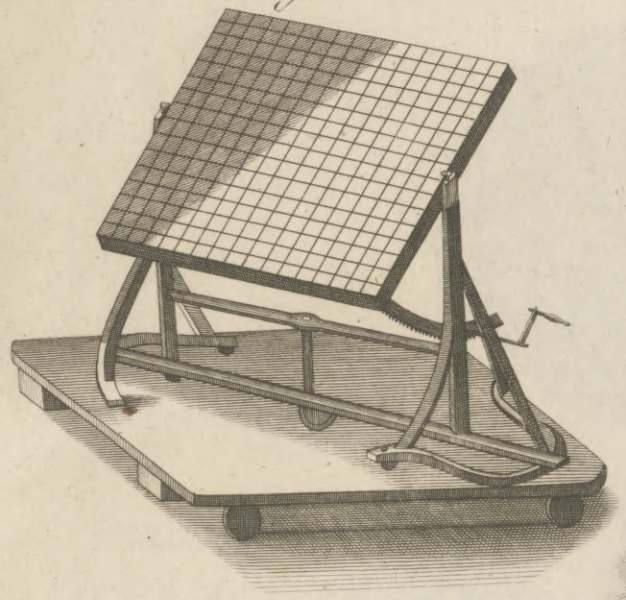
Subſtances fuſed, with their weight and time of fuſion.	Weight in Grains.	Time in Seconds.
Gold, pure,	20	3
Silver, do.	20	4
Copper, do.	33	20
Platina, do.	10	3
Nickell,	16	3
Bar iron, a cube,	10	12
Caſt iron, a cube,	10	3
Steel, a cube,	10	12
Scoria of wrought iron,	12	2
Terra ponderoſa or barytes,	10	7
A topaz, or chryſolite,	3	45
An oriental emerald,	2	25
Cryſtal pebble,	7	6
White agate,	10	30
Flint, oriental,	10	30
Rough cornelian,	10	75
Jaſper,	10	25
Onyx,	10	20
Garnet,	10	17
White rhomboidal ſpar,	10	60
Zeolites,	10	23
Rotten ſtone,	10	80
Common ſlate,	10	2
Aſbeſtos,	10	10
Common lime-ſtone,	10	55
Pumice-ſtone,	10	24
Lava,	10	7
Volcanic clay,	10	60
Corniſh moor-ſtone,	10	60

Burning Mountains. See Ætna, Hecla, Vesuvius, and Volcano, with the plates accompanying them.

Burning Springs. Of theſe there are many in different parts of the world; particularly one in Dauphiny near Grenoble; another near Hermanſtadt in Tranſylvania; a third at Chermay, a village near Switzerland; a fourth in the canton of Friburg; and a fifth not far from the city of Cracow in Poland. There alſo is, or was, a famous ſpring of the ſame kind at Wigan in Lancaſhire, which, upon the approach of a lighted candle, would take fire and burn like ſpirit of wine for a whole day. But the moſt remarkable one of this kind, or at leaſt that of which we have the moſt particular deſcription, was diſcovered in 1711 at Broſely in Shropſhire. The following account of this remarkable ſpring was given by the reverend Mr Maſon, Woodwardian profeſſor at Cambridge, dated February 18. 1746. "The well for four or five feet deep is ſix or ſeven feet wide; within that is another leſs hole of like depth dug in the clay, in the bottom whereof is placed a cylindric earthen veſſel, of about four or five inches diameter at the mouth, having the bottom taken off, and the ſides well fixed in the clay rammed

Burning Mirror of Archimedes.

Fig. 1.



Burning Mirror with elevations.

Fig. 2.

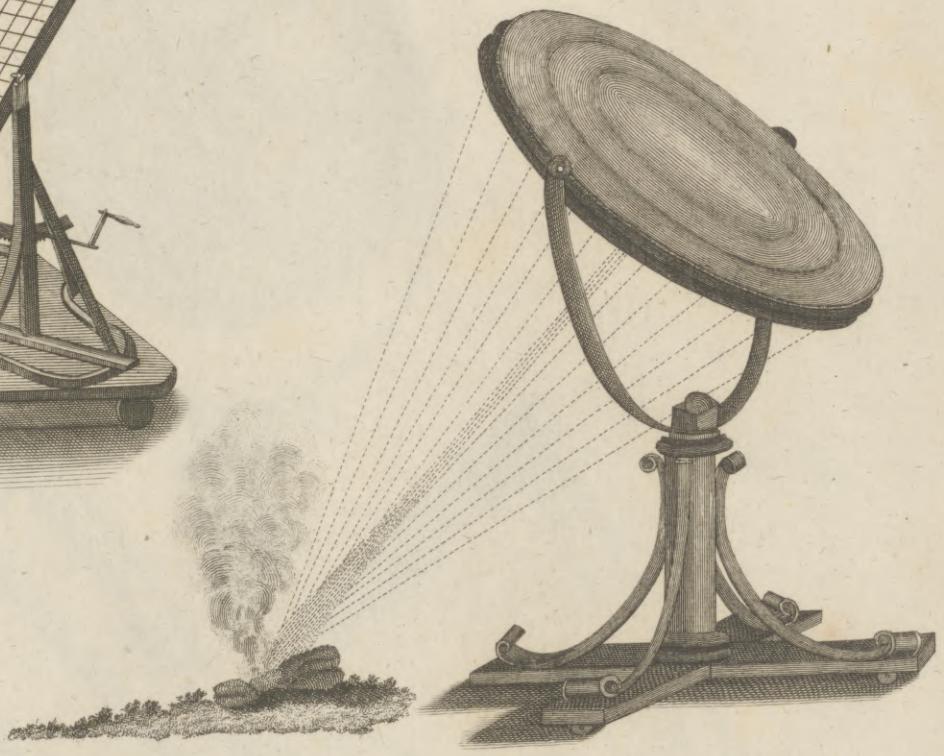


Fig. 3.

Burroughs Machine for polishing Glaſs.

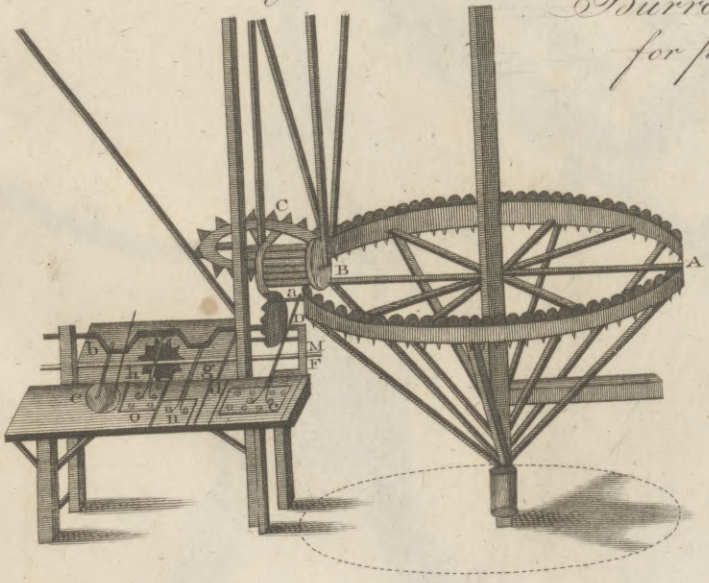
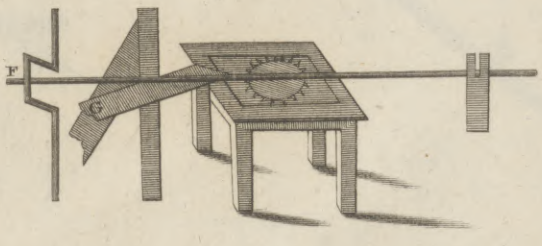


Fig. 4.

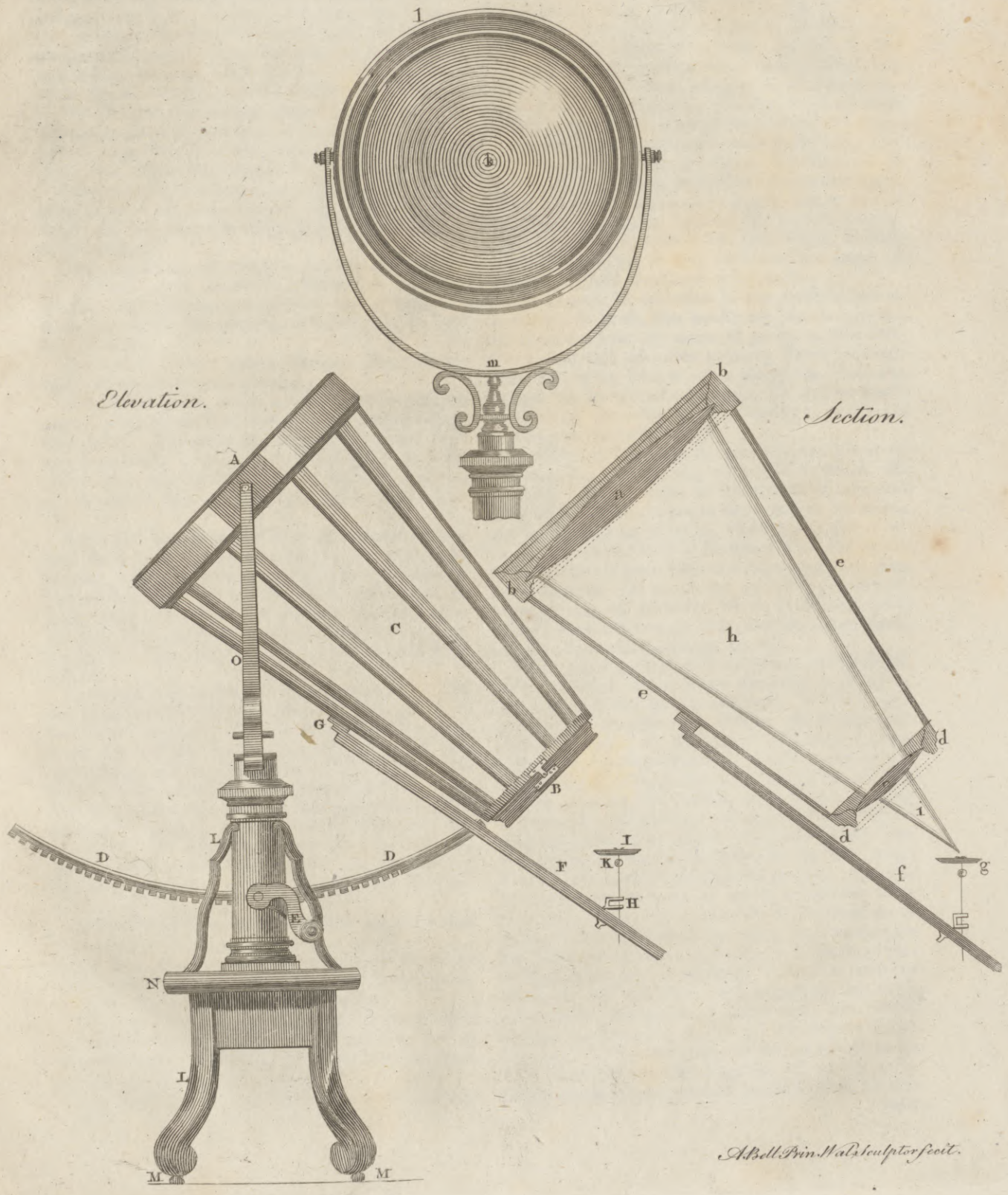


Abbett Prin. Wal. Sculptor fecit.

BURNING Lens.

Parker's.

Plate CXXXII.



A. Bell. Prin. Wal. Sculptor fecit.

Burning, Burniſher.

rammed cloſe about it. Within the pot is a brown water, thick as puddle, continually forced up with a violent motion beyond that of boiling water, and a rumbling hollow noiſe, riſing or falling by fits five or ſix inches; but there was no appearance of any vapour riſing, which perhaps might have been viſible, had not the ſun ſhone ſo bright. Upon putting a candle down at the end of a ſtick, at about a quarter of a yard diſtance, it took fire, darting and flaſhing after a very violent manner for about half a yard high, much in the manner of ſpirits in a lamp, but with great agitation. It was ſaid, that a tea-kettle had been made to boil in about nine minutes time, and that it had been left burning for 48 hours without any ſenſible diminution. It was extinguiſhed by putting a wet mop upon it; which muſt be kept there for a little time, otherwiſe it would not go out. Upon the removal of the mop there ariſes a ſulphureous ſmoke laſting about a minute, and yet the water is very cold to the touch." In 1755, this well totally diſappeared by the ſinking of a coal-pit in its neighbourhood.

The cauſe of the inflammable property of ſuch waters is, with great probability, ſuppoſed to be their mixture with petroleum, which is a very inflammable ſubſtance, and has the property of burning on the ſurface of water.

Burning of Colours, among painters. There are ſeveral colours that require burning; as,

Firſt, Lamp-black, which is a colour of ſo greaſy a nature, that, except it is burnt, it will require a long time to dry. The method of burning, or rather drying, lamp-black, is as follows: Put it into a crucible over a clear fire, letting it remain till it be red hot, or ſo near it that no manner of ſmoke ariſes from it.

Secondly, Umber, which if it be intended for colour for a horſe, or to be a ſhadow for gold, then burning fits it for both theſe purpoſes. In order to burn umber, you muſt put it into the naked fire, in large lumps, and not take it out till it is thoroughly red hot; if you have a mind to be more curious, put it into a crucible, and keep it over the fire till it be red hot.

Ivory alſo muſt be burnt to make black, thus: Fill two crucibles with ſhavings of ivory, then clap their two mouths together, and bind them faſt with an iron wire, and lute the joints cloſe with clay, ſalt, and horſe-dung, well beaten together; then ſet it over the fire, covering it all over with coals: let it remain in the fire till you are ſure that the matter encloſed is thoroughly red hot: then take it out of the fire; but do not open the crucibles till they are perfectly cold; for were they opened while hot, the matter would turn to aſhes; and ſo it will be, if the joints are not luted cloſe.

BURNISHER, a round poliſhed piece of ſteel ſerving to ſmooth and give a luſtre to metals.

Of theſe there are different kinds of different figures, ſtraight, crooked, &c. Half burniſhers are uſed to ſolder ſilver, as well as to give a luſtre.

Burniſhers for gold and ſilver are commonly made of a dog's or wolf's tooth, ſet in the end of an iron or wooden handle. Of late, agates and pebbles have been introduced, which many prefer to the dog's tooth.

The burniſhers uſed by engravers in copper, uſually ſerve with one end to burniſh, and with the other to ſcrape.

Burniſhing || Burns.

BURNISHING, the art of ſmoothing or poliſhing a metalline body, by a briſk rubbing of it with a burniſher.

Book-binders burniſh the edges of their books, by rubbing them with a dog's tooth.

BURNLEY, a town of Lancaſhire in England, ſituated in W. Long. 2. 5. N. Lat. 51. 38.

BURNS, Robert, was a native of Ayrſhire, one of the weſtern counties of Scotland. He was the ſon of humble parents; and his father paſſed through life in the condition of a hired labourer, or of a ſmall farmer. Even in this ſituation, however, it was not hard for him to ſend his children to the pariſh ſchool, to receive the ordinary inſtruction in reading, writing, arithmetic, and the principles of religion. By this courſe of education young Robert profited to a degree that might have encouraged his friends to deſtine him to one of the liberal profeſſions, had not his father's poverty made it neceſſary to remove him from ſchool, as ſoon as he had grown up, to earn for himſelf the means of ſupport as a hired ploughboy or ſhepherd.

The expence of education in the pariſh-ſchools of Scotland is ſo ſmall, that hardly any parents who are able to labour want the means of giving to their children at leaſt ſuch education as young Burns received. From the ſpring labours of a ploughboy, from the ſummer employment of a ſhepherd, the peaſant-youth often returns for a few months, eagerly to purſue his education at the pariſh-ſchool.

It was ſo with Burns; he returned from labour to learning, and from learning went again to labour, till his mind began to open to the charms of taſte and knowledge; till he began to feel a paſſion for books, and for the ſubjects of books, which was to give a colour to the whole thread of his future life. On nature he ſoon began to gaze with new diſcernment and with new enthuſiaſm: his mind's eye opened to perceive affecting beauty and ſublimity, where, by the mere groſs peaſant, there was nought to be ſeen but water, earth, and ſky—but animals, plants, and ſoil.

What might perhaps firſt contribute to diſpoſe his mind to poetical efforts, is one particular in the devotional piety of the Scotiſh peaſantry. It is ſtill common for them to make their children get by heart the Pſalms of David, in the verſion of homely rhymes which is uſed in their churches. In the morning and in the evening of every day, or at leaſt on the evening of every Saturday and Sunday, theſe Pſalms are ſung in ſolemn family-devotion, a chapter of the Bible is read, and extemporary prayer is fervently uttered. The whole books of the ſacred Scriptures are thus continually in the hands of almoſt every peaſant. And it is impoſſible that there ſhould not be occaſionally ſome ſouls among them, awakened to the divine emotions of genius by that rich aſſemblage which thoſe books preſent, of almoſt all that is intereſting in incidents, or pictureſque in imagery, or affectingly ſublime or tender in ſentiments and character. It is impoſſible that thoſe rude rhymes, and the ſimple artleſs muſic with which they are accompanied, ſhould not occaſionally excite ſome ear to a fond perception of the melody of verſe. That Burns had felt theſe impulſes, will appear undeniably certain to whoever ſhall carefully peruſe his *Cotter's*

Burns. *tar's Saturday's Night;* or ſhall remark, with nice obſervation, the various fragments of Scripture ſentiment, of Scripture imagery, of Scripture language, which are ſcattered throughout his works.

Still more intereſting to the young peaſantry are thoſe ancient ballads of love and war, of which a great number are, in the ſouth of Scotland, yet popularly known, and often ſung by the ruſtic maid or matron at her ſpinning-wheel. They are liſtened to with raviſhed ears by old and young. Their rude melody; that mingled curioſity and awe which are naturally excited by the very idea of their antiquity; the exquiſitely tender and natural complaints ſometimes poured forth in them; the gallant deeds of knightly heroiſm, which they ſometimes celebrate; their wild tales of demons, ghoſts, and fairies, in whoſe exiſtence ſuperſtition alone has believed; the manners which they repreſent; the obſolete, yet picturеſque and expreſſive, language in which they are often clothed—give them wonderful power to tranſport every imagination, and to agitate every heart. To the ſoul of Burns they were like a happy breeze touching the wires of an Æolian harp, and calling forth the moſt raviſhing melody.

Beſide all this, the Gentle Shepherd, and the other poems of Allan Ramſay, have long been highly popular in Scotland. They fell early into the hands of Burns; and while the fond applauſe which they received drew his emulation, they preſented to him likewiſe treaſures of phraſeology and models of verſification. He got acquainted at the ſame time with the poetry of Robert Fergуſon, written chiefly in the Scotiſh dialect, and exhibiting many ſpecimens of uncommon poetical excellence. The Seaſons of Thomſon too, the Grave of Blair, the far-famed Elegy of Gray, the Paradiſe Loſt of Milton, perhaps the Minſtrel of Beattie, were ſo commonly read, even among thoſe with whom Burns would naturally aſſociate, that poetical curioſity, although even leſs ardent than his, could in ſuch circumſtances have little difficulty in procuring them.

With ſuch means to give his imagination a poetical bias, and to favour the culture of his taſte and genius, Burns gradually became a poet. He was not, however, one of thoſe forward children who, from a miſtaken impulſe, begin prematurely to write and to rhyme, and hence never attain to excellence. Converſing familiarly for a long while with the works of thoſe poets who were known to him; contemplating the aſpect of nature in a diſtrict which exhibits an uncommon aſſemblage of the beautiful and the ruggedly grand, of the cultivated and the wild; looking upon human life with an eye quick and keen, to remark as well the ſtronger and leading, as the nicer and ſubordinate, features of character; to diſcriminate the generous, the honourable, the manly, in conduct, from the ridiculous, the baſe, and the mean—he was diſtinguiſhed among his fellows for extraordinary intelligence, good ſenſe, and penetration, long before others, or perhaps even himſelf, ſuſpected him to be capable of writing verſes. His mind was mature, and well ſtored with ſuch knowledge as lay within his ſearch: he had made himſelf maſter of powers of language, ſuperior to thoſe of almoſt any former writer in the Scotiſh dialect, before he conceived the idea of ſurpaſſing Ramſay and Fergуſon.

Hitherto he had converſed intimately only with peaſants on his own level; but having got admiſſion into the fraternity of free-maſons, he had the fortune, whether good or bad, to attract in the lodges the notice of gentlemen better qualified than his more youthful companions to call forth the powers of his mind, and to ſhow him that he was indeed a poet. A maſonic ſong, a ſatirical epigram, a rhyming epiſtle to a friend, attempted with ſucceſs, taught him to know his own powers, and gave him confidence to try taſks more arduous, and which ſhould command ſtill higher burſts of applauſe. Burns.

The annual celebration of the ſacrament of the Lord's Supper, in the rural pariſhes of Scotland, has much in it of thoſe old popiſh feſtivals, in which ſuperſtition, traffic, and amuſement, uſed to be ſtrangely intermingled. Burns ſaw, and ſeized in it one of the happieſt of all ſubjects, to afford ſcope for the diſplay of that ſtrong and piercing ſagacity by which he could almoſt intuitively diſtinguiſh the reaſonable from the abſurd, and the becoming from the ridiculous; of that picturеſque power of fancy, which enabled him to repreſent ſcenes, and perſons, and groupes, and looks, attitude, and geſtures, in a manner almoſt as lively and impreſſive, even in words, as if all the artifices and energies of the pencil had been employed; of that knowledge which he had neceſſarily acquired of the manners, paſſions, and prejudices of the ruſtics around him, of whatever was ridiculous, no leſs than of whatever was affectingly beautiful, in rural life.

A thouſand prejudices of Popiſh, and perhaps too of ruder Pagan ſuperſtition, have from time immemorial been connected in the minds of the Scotiſh peaſantry, with the annual recurrence of the Eve of the Feſtival of all the Saints, or Halloween. Theſe were all intimately known to Burns, and had made a powerful impreſſion upon his imagination and feelings. He choſe them for the ſubject of a poem, and produced a piece which is almoſt to frenzy the delight of thoſe who are beſt acquainted with its ſubject; and which will not fail to preſerve the memory of the prejudices and uſages which it deſcribes, when they ſhall perhaps have ceaſed to give one merry evening in the year to the cottage fire-ſide.

The ſimple joys, the honeſt love, the ſincere friendſhip, the ardent devotion of the cottage; whatever in the more ſolemn part of the ruſtic's life is humble and artleſs, without being mean or unſeemly—or tender and dignified, without aſpiring to ſtilted grandeur, or to unnatural buſkined pathos, had deeply impreſſed the imagination of the riſing poet; had, in ſome ſort, wrought itſelf into the very texture of the fibres of his ſoul. He tried to expreſs in verſe what he moſt tenderly felt, what he moſt enthuſiaſtically imagined; and produced the *Cottar's Saturday's Night.*

Theſe pieces, the true effuſions of genius, informed by reading and obſervation, and prompted by its own native ardour, as well as by friendly applauſe, were ſoon handed about amongſt the moſt diſcerning of Burns's acquaintance; and were by every new reader peruſed and reperuſed, with an eagerneſs of delight and approbation which would not ſuffer their author long to withhold them from the preſs. A ſubſcription was propoſed; was earneſtly promoted by ſome gentlemen, who were glad to intereſt themſelves in behalf of ſuch ſignal poetical merit; was ſoon crowded with the names of a conſiderable number of the inhabitants

of

Burns. of Ayrſhire, who in the proffered purchaſe ſought not leſs to gratify their own paſſion for Scotiſh poeſy, than to encourage the wonderful ploughman. At Kilmarnock were the poems of Burns for the firſt time printed. The whole edition was quickly diſtributed over the country.

It is hardly poſſible to expreſs with what eager admiration and delight they were everywhere received.—They eminently poſſeſſed all thoſe qualities which the moſt invariably contribute to render any literary work quickly and permanently popular. They were written in a phraſeology, of which all the powers were univerſally felt; and which being at once antique, familiar, and now rarely written, was hence fitted to ſerve all the dignified and pictureſque uſes of poetry, without making it unintelligible. The imagery, the ſentiments, were at once faithfully natural, and irreſiſtibly impreſſive and intereſting. Thoſe topics of ſatire and ſcandal in which the ruſtic delights; that humorous imitation of character, and that witty aſſociation of ideas familiar and ſtriking, yet not naturally allied to one another, which has force to ſhake his ſides with laughter; thoſe fancies of ſuperſtition, at which he ſtill wonders and trembles; thoſe affecting ſentiments and images of true religion, which are at once dear and awful to his heart, were all repreſented by Burns with all a poet's magic power. Old and young, high and low, grave and gay, learned or ignorant, all were alike delighted, agitated, tranſported.

In the mean time, ſome few copies of theſe faſcinating poems found their way to Edinburgh; and having been read to Dr Blacklock, they obtained his warmeſt approbation. In the beginning of the winter 1786-7 Burns went to Edinburgh, where he was received by Dr Blacklock with the moſt flattering kindneſs, and introduced to every man of generoſity and taſte among that good man's friends. Multitudes now vied with each other in patronizing the ruſtic poet. Thoſe who poſſeſſed at once true taſte and ardent philanthropy were ſoon earneſtly united in his praiſe: they who were diſpoſed to favour any good thing belonging to Scotland, purely becauſe it was Scotiſh, gladly joined the cry; thoſe who had hearts and underſtanding to be charmed, without knowing why, when they ſaw their native cuſtoms, manners, and language, made the ſubjects and the materials of poeſy, could not ſuppreſs that voice of feeling which ſtruggled to declare itſelf for Burns: for the diſſipated, the licentious, the malignant wits, and the freethinkers, he was ſo unfortunate as to have ſatire, and obſcenity, and ridicule of things ſacred, ſufficient to captivate their fancies; even for the pious he had paſſages in which the inſpired language of devotion might ſeem to come mended from his pen.

Thus did Burns, ere he had been many weeks in Edinburgh, find himſelf the object of univerſal curioſity, favour, admiration, and fondneſs. He was ſought after, courted with attentions the moſt reſpectful and aſſiduous, feaſted, flattered, careſſed, treated by all ranks as the firſt boaſt of his country, whom it was ſcarcely poſſible to honour and reward to a degree equal to his merits. In compariſon with the general favour which now promiſed to more than crown his moſt ſanguine hopes, it could hardly be called praiſe at all which he had obtained in Ayrſhire.

In this poſture of our poet's affairs a new edition of his poems was earneſtly called for. He ſold the copy-right for 100l.; but his friends at the ſame time ſuggeſted, and actively promoted, a ſubſcription for an edition, to be publiſhed for the benefit of the author, ere the bookſeller's right ſhould commence. Thoſe gentlemen who had formerly entertained the public of Edinburgh with the periodical publication of the papers of the *Mirror*, having again combined their talents in producing the *Lounger*, were at this time about to conclude this laſt ſeries of papers; yet before the Lounger relinquiſhed his pen, he dedicated a number to a commendatory criticiſm of the poems of the Ayrſhire bard. Burns.

The ſubſcription-papers were rapidly filled; and it was ſuppoſed that the poet might derive from the ſubſcription and the ſale of his copy-right a clear profit of at leaſt 700l.

The converſation of even the moſt eminent authors is often found to be ſo unequal to the fame of their writings, that he who reads with admiration can liſten with none but ſentiments of the moſt profound contempt. But the converſation of Burns was, in compariſon with the formal and exterior circumſtances of his education, perhaps even more wonderful than his poetry. He affected no ſoft air or graceful motions of politeneſs, which might have ill accorded with the ruſtic plainneſs of his native manners. Conſcious ſuperiority of mind taught him to aſſociate with the great, the learned, and the gay, without being overawed into any ſuch baſhfulneſs as might have made him confuſed in thought, or heſitating in elocution. He poſſeſſed withal an extraordinary ſhare of plain common ſenſe or mother-wit, which prevented him from obtruding upon perſons, of whatever rank, with whom he was admitted to converſe, any of thoſe effuſions of vanity, envy, or ſelf-conceit, in which authors are exceedingly apt to indulge, who have lived remote from the general practice of life, and whoſe minds have been almoſt excluſively confined to contemplate their own ſtudies and their own works. In converſation he diſplayed a ſort of intuitive quickneſs and rectitude of judgment upon every ſubject that aroſe. The ſenſibility of his heart, and the vivacity of his fancy, gave a rich colouring to whatever reaſoning he was diſpoſed to advance; and his language in converſation was not at all leſs happy than in his writings. For theſe reaſons, thoſe who had met and converſed with him once, were pleaſed to meet and to converſe with him again and again.

For ſome time he converſed only with the virtuous, the learned, and the wiſe; and the purity of his morals remained uncontaminated. But, alas! he fell, as others have fallen in ſimilar circumſtances. He ſuffered himſelf to be ſurrounded by a race of miſerable beings, who were proud to tell that they had been in company with Burns, and had ſeen Burns as looſe and as fooliſh as themſelves. He was not yet irrecoverably loſt to temperance and moderation; but he was already almoſt too much captivated with their wanton rivals, to be ever more won back to a faithful attachment to their more ſober charms. He now alſo began to contract ſomething of new arrogance in converſation. Accuſtomed to be among his favourite aſſociates what is vulgarly but expreſſively called *the cock of the company*, he could ſcarcely refrain from indulging in ſimilar free-

Burns. dom and dictatorial decision of talk, even in the presence of persons who could less patiently endure his presumption.

The subscription edition of his poems, in the mean time, appeared; and although not enlarged beyond that which came from the Kilmarnock press by any new pieces of eminent merit, did not fail to give entire satisfaction to the subscribers. He was now to close accounts with his bookseller and his printer, to retire to the country with his profits in his pocket, and to fix upon a plan for his future life. He talked loudly of independence of spirit, and simplicity of manners, and boasted his resolution to return to the plough; yet still he lingered in Edinburgh, week after week, and month after month, perhaps expecting that one or other of his noble patrons might procure him some permanent and competent annual income, which should set him above all necessity of future exertions to earn for himself the means of subsistence; perhaps unconsciously reluctant to quit the pleasures of that voluptuous town-life to which he had for some time too willingly accustomed himself. An accidental dislocation or fracture of an arm or a leg confining him for some weeks to his apartment, left him during this time leisure for serious reflection; and he determined to retire from the town without longer delay. None of all his patrons interposed to divert him from his purpose of returning to the plough, by the offer of any small pension, or any sinecure place of moderate emolument, such as might have given him competence without withdrawing him from his poetical studies. It seemed to be forgotten that a ploughman thus exalted into a man of letters was unfitted for his former toils, without being regularly qualified to enter the career of any new profession; and that it became incumbent upon those patrons who had called him from the plough, not merely to make him their companion in the hour of riot, not simply to fill his purse with gold for a few transient expences, but to secure him, as far as was possible, from being ever overwhelmed in distress in consequence of the favour which they had shown him, and of the habits of life into which they had seduced him. Perhaps indeed the same delusion of fancy betrayed both Burns and his patrons into the mistaken idea, that, after all which had passed, it was still possible for him to return in cheerful content to the homely joys and simple toils of undissipated rural life.

In this temper of Burns's mind, in this state of his fortune, a farm and the excise were the objects upon which his choice ultimately fixed for future employment and support. By the surgeon who attended him during his illness, he was recommended with effect to the commissioners of excise; and Patrick Millar, Esq. of Dalswinton, deceived, like Burns himself and Burns's other friends, into an idea that the poet and exciseman might yet be respectable and happy as a farmer, generously proposed to establish him in a farm, upon conditions of lease which prudence and industry might easily render exceedingly advantageous. Burns eagerly accepted the offers of this benevolent patron. Two of the poet's friends from Ayrshire were invited to survey that farm in Dumfriesshire which Mr Millar offered. A lease was granted to the poetical farmer at that annual rent which his own friends declared that the due cultivation of his farm might easily enable him to pay. What yet remained of the profits of his publication was laid out in the purchase of farm stock; and Mr Millar might, for some short time, please himself with the persuasion that he had approved himself the liberal patron of genius; had acquired a good tenant upon his estate; and had placed a deserving man in the very situation in which alone he himself desired to be placed, in order to be happy to his wishes. Burns.

Burns, with his Jane, whom he now married, took up their residence upon his farm. The neighbouring farmers and gentlemen, pleased to obtain for an inmate among them the poet by whose works they had been delighted, kindly sought his company, and invited him to their houses. He found an inexpressible charm in sitting down beside his wife, at his own fireside; in wandering over his own grounds; in once more putting his hand to the spade and the plough; in forming his inclosures, and managing his cattle. For some months he felt almost all that felicity which fancy had taught him to expect in his new situation. He had been for a time idle; but his muscles were not yet unbraced for rural toil. He now seemed to find a joy in being the husband of the mistress of his affections, in seeing himself the father of her children, such as might promise to attach him for ever to that modest, humble, and domestic life, in which alone he could hope to be permanently happy. Even his engagements in the service of the excise did not, at the very first, threaten necessarily to debase him by association with the mean, the gross, and the profligate, to contaminate the poet, or to ruin the farmer.

But it could not be: it was not possible for Burns now to assume that soberness of fancy and passions, that sedateness of feeling, those habits of earnest attention to gross and vulgar cares, without which success in his new situation was not to be expected. A thousand difficulties were to be encountered and overcome, much money was to be expended, much weary toil was to be exercised, before his farm could be brought into a state of cultivation, in which its produce might enrich the occupier. This was not a prospect encouraging to a man who had never loved labour, and who was at this time certainly not at all disposed to enter into agriculture with the enthusiasm of a projector. The business of the excise too, as he began to be more and more employed in it, distracted his mind from the care of his farm, led him into gross and vulgar society, and exposed him to many unavoidable temptations to drunken excess, such as he had no longer sufficient fortitude to resist. Amidst the anxieties, distractions, and seducements which thus arose to him, home became insensibly less and less pleasing; even the endearments of his Jane's affection began to lose their hold on his heart; he became every day less and less unwilling to forget in riot those gathering sorrows which he knew not to subdue.

Mr Millar and some others of his friends would gladly have exerted an influence over his mind which might have preserved him in this situation of his affairs, equally from despondency and from dissipation; but Burns's temper spurned all controul from his superiors in fortune. He resented, as an arrogant encroachment upon his independence, that tenor of conduct by which Mr Millar wished to turn him from dissolute conviviality, to that steady attention to the business of his farm, without which it was impossible to thrive in it.

His

Burns. His croſſes and diſappointments drove him every day more and more into diſſipation; and his diſſipation tended to enhance whatever was diſagreeable and perplexing in the ſtate of his affairs. He ſunk, by degrees, into the boon companion of mere exciſemen; and almoſt every drunken fellow, who was willing to ſpend his money laviſhly in the alehouſe, could eaſily command the company of Burns. The care of his farm was thus neglected; waſte and loſſes wholly conſumed his little capital; he reſigned his leaſe into the hands of his landlord; and retired, with his family, to the town of Dumfries, determining to depend entirely for the means of future ſupport upon his income as an exciſe-officer.

Yet during this unfortunate period of his life, which paſſed between his departure from Edinburgh to ſettle in Dumfriesſhire, and his leaving the country in order to take up his reſidence in the town of Dumfries, the energy and activity of his intellectual powers appeared not to have been at all impaired. In a collection of Scotiſh ſongs, which were publiſhed (the words with the muſic) by Mr Johnſon, engraver in Edinburgh, in 4 vols 8vo, Burns, in many inſtances, accommodated new verſes to the old tunes with admirable felicity and ſkill. He aſſiſted in the temporary inſtitution of a ſmall ſubſcription library, for the uſe of a number of the well-diſpoſed peaſants in his neighbourhood. He readily aided, and by his knowledge of genuine Scotiſh phraſeology and manners greatly enlightened, the antiquarian reſearches of the late ingenious Captain Groſe. He ſtill carried on an epiſtolary correſpondence, ſometimes gay, ſportive, humorous, but always enlivened by bright flaſhes of genius, with a number of his old friends, and on a very wide diverſity of topics. At times, as it ſhould ſeem from his writings of this period, he reflected, with inexpreſſible heart-bitterneſs, on the high hopes from which he had fallen; on the errors of moral conduct into which he had been hurried by the ardour of his ſoul, and in ſome meaſure by the very generoſity of his nature; on the diſgrace and wretchedneſs into which he ſaw himſelf rapidly ſinking; on the ſorrow with which his miſconduct oppreſſed the heart of his Jane; on the want and deſtitute miſery in which it ſeemed probable that he muſt leave her and their infants; nor amidſt theſe agonizing reflections did he fail to look, with an indignation half invidious, half contemptuous, on thoſe who, with moral habits not more excellent than his, with powers of intellect far inferior, yet baſked in the ſunſhine of fortune, and were loaded with the wealth and honours of the world, while his follies could not obtain pardon, nor his wants an honourable ſupply. His wit became from this time more gloomily ſarcaſtic; and his converſation and writings began to aſſume ſomething of a tone of miſanthropical malignity, by which they had not been before, in any eminent degree, diſtinguiſhed. But with all theſe failings, he was ſtill that exalted mind which had raiſed itſelf above the depreſſion of its original condition: with all the energy of the lion, pawing to ſet free his hinder limbs from the yet encumbering earth, he ſtill appeared *not leſs than archangel ruined!*

His morals were not mended by his removal from the country. In Dumfries his diſſipation became ſtill more deeply habitual; he was here more expoſed than in the country to be ſolicited to ſhare the riot of the diſſolute and the idle: fooliſh young men flocked eagerly about him, and from time to time preſſed him to drink with them, that they might enjoy his wicked wit. The Caledonian Club, too, and the Dumfriesſhire and Galloway Hunt, had occaſional meetings in Dumfries after Burns went to reſide there, and the poet was of courſe invited to ſhare their conviviality, and heſitated not to accept the invitation. Burns.

In the intervals between his different fits of intemperance, he ſuffered ſtill the keeneſt anguiſh of remorſe, and horribly afflictive foreſight. His Jane ſtill behaved with a degree of maternal and conjugal tenderneſs and prudence, which made him feel more bitterly the evil of his miſconduct, although they could not reclaim him. At laſt crippled, emaciated, having the very power of animation waſted by diſeaſe, quite brokenhearted by the ſenſe of his errors, and of the hopeleſs miſeries in which he ſaw himſelf and his family depreſſed; with his ſoul ſtill tremblingly alive to the ſenſe of ſhame, and to the love of virtue; yet even in the laſt feebleneſs, and amid the laſt agonies of expiring life, yielding readily to any temptation that offered the ſemblance of intemperate enjoyment, he died at Dumfries, in the ſummer of 1796, while he was yet three or four years under the age of 40, furniſhing a melancholy proof of the danger of *ſuddenly* elevating even the greateſt mind above its original level.

After his death it quickly appeared that his failings had not effaced from the minds of his more reſpectable acquaintance either the regard which had once been won by his ſocial qualities, or the reverence due to his intellectual talents. The circumſtances of want in which he left his family were noticed by the gentlemen of Dumfries with earneſt commiſeration. His funeral was celebrated by the care of his friends with a decent ſolemnity, and with a numerous attendance of mourners, ſufficiently honourable to his memory. Several copies of verſes were inſerted in different newſpapers upon the occaſion of his death. A contribution, by ſubſcription, was propoſed, for the purpoſe of raiſing a ſmall fund, for the decent ſupport of his widow, and the education of his infant children.

From the preceding detail of the particulars of this poet's life, the reader will naturally and juſtly infer him to have been an honeſt, proud, warm-hearted man; of high paſſions and ſound underſtanding, and a vigorous and excurſive imagination. He was never known to deſcend to any act of deliberate meanneſs. In Dumfries he retained many reſpectable friends, even to the laſt. It may be doubted whether he has not, by his writings, exerciſed a greater power over the minds of men, and, by conſequence, on their conduct, upon their happineſs and miſery, and upon the general ſyſtem of life, than has been exerciſed by any half dozen of the moſt eminent ſtateſmen of the preſent age. The power of the ſtateſman is but ſhadowy, ſo far as it acts upon externals alone: the power of the writer of genius ſubdues the heart and the underſtanding, and having thus made the very ſpring of action its own, through them moulds almoſt all life and nature at its pleaſure. Burns has not failed to command one remarkable ſort of homage, ſuch as is never paid but to great original genius: a crowd of poetaſters ſtarted up to imitate him, by writing verſes as he had done,

Burns. in the Scotiſh dialect; but, *O imitatores! ſervum pecus!* To perſons to whom the Scotiſh dialect, and the cuſtoms and manners of rural life in Scotland, have no charm, too much may appear to have been ſaid about Burns; by thoſe who paſſionately admire him, a great deal more, perhaps, was expected.

A complete edition of his works in 4 vols 8vo, was publiſhed under the ſuperintendance of Dr Currie of Liverpool, who drew up an elaborate and valuable account of the life of the poet, which is prefixed. From the profits of this edition his widow and family have received a handſome ſum. The following letter from Burns to the late Dr Moore, gives ſo intereſting an account of the tranſactions of his early years, and affords ſo good a ſpecimen of vigour of thought and force of expreſſion in his proſe compoſition, that we hope it will prove acceptable to our readers.

" *Mauchline*, Auguſt 2. 1787.—Sir, For ſome months paſt I have been rambling up and down the country, but I am now confined with ſome lingering complaints, originating, as I take it, in the ſtomach. To divert my ſpirits a little in this miſerable fog of *ennui*, I have taken a whim to give you a hiſtory of myſelf. My name has made ſome little noiſe in this country; you have done me the honour to intereſt yourſelf very warmly in my behalf; and I think a faithful account of what character of a man I am, and how I came by that character, may perhaps amuſe you in an idle moment. I will give you an honeſt narrative, though I know it will be often at my own expence; for I aſſure you, Sir, I have, like Solomon, whoſe character, excepting in the trifling affair of wiſdom, I ſometimes think I reſemble, I have, I ſay, like him turned my eyes to behold madneſs and folly, and like him too, frequently ſhaken hands with their intoxicating friendſhip. * * * After you have peruſed theſe pages, ſhould you think them trifling and impertinent, I only beg leave to tell you, that the poor author wrote them under ſome twitching qualms of conſcience, ariſing from a ſuſpicion that he was doing what he ought not to do; a predicament he has more than once been in before.

" I have not the moſt diſtant pretenſions to aſſume that character which the pye-coated guardians of eſcutcheons call, a gentleman. When at Edinburgh laſt winter, I got acquainted in the heralds office, and looking through that granary of honours, I there found almoſt every name of the kingdom; but for me,

——My ancient but ignoble blood
Has crept thro' ſcoundrels ever ſince the flood.

Gules, purpure, argent, &c. quite diſowned me.

" My father was of the north of Scotland, the ſon of a farmer, and was thrown by early misfortunes on the world at large; where, after many years wanderings and ſojournings, he picked up a pretty large quantity of obſervation and experience, to which I am indebted for moſt of my little pretenſions to wiſdom.—I have met with few who underſtood men, their manners, and their ways, equal to him; but ſtubborn ungainly integrity, and headlong ungovernable irraſcibility, are diſqualifying circumſtances; conſequently I was born a very poor man's ſon. For the firſt ſix or ſeven years of my life, my father was a gardener to a worthy gentleman of a ſmall eſtate in the neighbourhood of Ayr. Had he continued in that ſtation, I Burns. muſt have marched off to be one of the little underlings about a farm-houſe; but it was his deareſt wiſh and prayer to have it in his power to keep his children under his own eye, till they could diſcern between good and evil; ſo with the aſſiſtance of his generous maſter, my father ventured on a ſmall farm on his eſtate. At theſe years I was by no means a favourite with any body. I was a good deal noted for a retentive memory, a ſtubborn ſturdy ſomething in my diſpoſition, and an enthuſiaſtic ideot piety. I ſay ideot piety, becauſe I was then but a child. Though it coſt the ſchoolmaſter ſome thraſhings, I made an excellent Engliſh ſcholar; and by the time I was 10 or 12 years of age, I was a critic in ſubſtantives, verbs, and particles. In my infant and boyiſh days too, I owed much to an old woman who reſided in the family, remarkable for her ignorance, credulity, and ſuperſtition. She had, I ſuppoſe, the largeſt collection in the country of tales and ſongs concerning devils, ghoſts, fairies, brownies, witches, warlocks, ſpunkies, kelpies, elf-candles, dead-lights, wraiths, apparitions, cantraips, giants, inchanted towers, dragons, and other trumpery. This cultivated the latent ſeeds of poetry; but had ſo ſtrong an effect on my imagination, that to this hour, in my nocturnal rambles, I ſometimes keep a ſharp look-out in ſuſpicious places; and though nobody can be more ſceptical than I am in ſuch matters, yet it often takes an effort of philoſophy to ſhake off theſe idle terrors. The earlieſt compoſition that I recollect taking pleaſure in, was the Viſion of Mirza, and a hymn of Addiſon's, beginning, 'How are thy ſervants bleſt, O Lord!' I particularly remember one half-ſtanza which was muſic to my boyiſh ear—

For though on dreadful whirls we hung
High on the broken wave.—

I met with theſe pieces in Maſon's Engliſh Collection, one of my ſchool-books. The two firſt books I ever read in private, and which gave me more pleaſure than any two books I ever read ſince, were, The Life of Hannibal, and The Hiſtory of Sir William Wallace. Hannibal gave my young ideas ſuch a turn, that I uſed to ſtrut in raptures up and down after the recruiting drum and bag-pipe, and wiſh myſelf tall enough to be a ſoldier; while the ſtory of Wallace poured a Scotiſh prejudice into my veins, which will boil along there, till the flood-gates of life ſhut in eternal reſt.

" Polemical divinity about this time was putting the country half mad, and I, ambitious of ſhining in converſation parties on Sundays between ſermons, at funerals, &c. uſed a few years afterwards to puzzle Calviniſm with ſo much heat and indiſcretion, that I raiſed a hue and cry of hereſy againſt me, which has not ceaſed to this hour.

" My vicinity to Ayr was of ſome advantage to me. My ſocial diſpoſition, when not checked by ſome modifications of ſpited pride, was, like our catechiſm definition of infinitude, without bounds or limits. I formed ſeveral connexions with other younkers who poſſeſſed ſuperior advantages; the youngling actors who were buſy in the rehearſal of parts in which they were ſhortly to appear on the ſtage of life, where, alas! I was deſtined to drudge behind the ſcenes. It is not commonly at this green age, that our young

gentry

Burns. gentry have a juſt ſenſe of the immenſe diſtance between them and their ragged play-fellows. It takes a few daſhes into the world, to give the young great man that proper, decent, unnoticing diſregard for the poor, inſignificant, ſtupid devils, the mechanics and peaſantry around him, who were perhaps born in the ſame village. My young ſuperiors never inſulted the *clouterly* appearance of my plough-boy carcaſe, the two extremes of which were often expoſed to all the inclemencies of all the ſeaſons. They would give me ſtray volumes of books; among them, even then, I could pick up ſome obſervations, and one, whoſe heart I am ſure not even the Munny Begum ſcenes have tainted, helped me to a little French. Parting with theſe my young friends and benefactors, as they occaſionally went off for the Eaſt or Weſt Indies, was often to me a ſore affliction, but I was ſoon called to more ſerious evils. My father's generous maſter died; the farm proved a ruinous bargain; and to clench the misfortune, we fell into the hands of a factor, who ſat for the picture I have drawn of one in my tale of Twa Dogs. My father was advanced in life when he married; I was the eldeſt of ſeven children, and he, worn out by early hardſhips, was unfit for labour. My father's ſpirit was ſoon irritated, but not eaſily broken. There was a freedom in his leaſe in two years more, and to weather theſe two years, we retrenched our expences. We lived very poorly: I was a dexterous ploughman for my age; and the next oldeſt to me was a brother (Gilbert) who could drive the plough very well, and help me to thraſh the corn. A novel-writer might perhaps have viewed theſe ſcenes with ſome ſatisfaction, but ſo did not I; my indignation yet boils at the recollection of the ſ——l factor's inſolent threatening letters, which uſed to ſet us all in tears.

"This kind of life—the cheerleſs gloom of a hermit, with the unceaſing moil of a galley-ſlave, brought me to my 16th year; a little before which period I firſt committed the ſin of rhyme. You know our country cuſtom of coupling a man and woman together as partners in the labours of harveſt. In my 15th autumn, my partner was a bewitching creature, a year younger than myſelf. My ſcarcity of Engliſh denies me the power of doing her juſtice in that language, but you know the Scotiſh idiom; ſhe was a bonnie, ſweet, ſonſie laſs. In ſhort, ſhe altogether, unwittingly to herſelf, initiated me in that delicious paſſion, which, in ſpite of acid diſappointment, gin-horſe prudence, and book-worm philoſophy, I hold to be the firſt of human joys, our deareſt bleſſing here below! How ſhe caught the contagion I cannot tell; you medical people talk much of infection from breathing the ſame air, the touch, &c. but I never expreſsly ſaid I loved her.—Indeed I did not know myſelf why I liked ſo much to loiter behind with her, when returning in the evening from our labours; why the tones of her voice made my heart-ſtrings thrill like an Æolian harp; and particularly why my pulſe beat ſuch a furious ratan when I looked and fingered over her little hand to pick out the cruel nettle-ſtings and thiſtles. Among her other love-inſpiring qualities, ſhe ſung ſweetly; and it was her favourite reel to which I attempted giving an embodied vehicle in rhyme. I was not ſo preſumptuous as to imagine that I could make verſes like printed ones, compoſed by men who had Greek and Latin; but my girl ſung a ſong which was ſaid to be compoſed by a ſmall country laird's ſon, on one of his father's maids, with whom he was in love; and I ſaw no reaſon why I might not rhyme as well as he; for excepting that he could ſmear ſheep, and caſt peats, his father living in the moorlands, he had no more ſcholar-craft than myſelf. Burns || Burrock.

"Thus with me began love and poetry; which at times have been my only, and, till within the laſt 12 months, have been my higheſt enjoyment. My father ſtruggled on till he reached the freedom in his leaſe, when he entered on a larger farm, about ten miles farther in the country. The nature of the bargain he made was ſuch as to throw a little ready money into his hands at the commencement of his leaſe, otherwiſe the affair would have been impracticable. For four years we lived comfortably here; but a difference commencing between him and his landlord as to terms, after three years toſſing and whirling in the vortex of litigation, my father was juſt ſaved from the horrors of a jail, by a conſumption, which, after two years promiſes, kindly ſtepped in, and carried him away, to "where the wicked ceaſe from troubling, and where the weary are at reſt!"

"It is during the time that we lived on this farm, that my little ſtory is moſt eventful. I was, at the beginning of this period, perhaps the moſt ungainly awkward boy in the pariſh—no ſolitaire was leſs acquainted with the ways of the world. What I knew of ancient ſtory was gathered from Salmon's and Guthrie's geographical grammars; and the ideas I had formed of modern manners, of literature, and criticiſm, I got from the Spectator. Theſe, with Pope's Works, ſome plays of Shakeſpeare, Tull and Dickſon on Agriculture, the Pantheon, Locke's Eſſay on the Human Underſtanding, Stackhouſe's Hiſtory of the Bible, Juſtice's Britiſh Gardener's Directory, Bayle's Lectures, Allan Ramſay's Works, Taylor's Scripture Doctrine of Original Sin, a Select Collection of Engliſh Songs, and Hervey's Meditations, had formed the whole of my reading. The collection of ſongs was my *vade mecum*. I pored over them driving my cart, or walking to labour, ſong by ſong, verſe by verſe; carefully noting the true tender, or ſublime, from affectation and fuſtian. I am convinced I owe to this practice much of my critic-craft, ſuch as it is." (*Month. Mag. and Currie's Life of Burns.*)

BURNTISLAND. See Bruntisland.

BURNTWOOD, a town of Eſſex in England, ſituated on a hill, in E. Long. 0. 25. N. Lat. 51. 38.

BURR, the round knob of a horn next a deer's head.

BURRE, Bouree, or *Boree*, a kind of dance compoſed of three ſteps joined together in two motions, begun with a crotchet riſing. The firſt couplet contains twice four meaſures, the ſecond twice eight. It conſiſts of a balance and coupee.

BURR-pump, or *Bilge-Pump*, differs from the common pump, in having a ſtaff, ſix, ſeven, or eight feet long, with a bar of wood, whereto the leather is nailed, and this ſerves inſtead of a box. So two men, ſtanding over the pump, thruſt down this ſtaff, to the middle whereof is faſtened a rope, for ſix, eight, or ten to hale by, thus pulling it up and down.

BURROCK, a ſmall wier or dam, where weels are laid in a river, for the taking of fiſh.

BURROUGHS'S

Burroughs's Machine.

Plate CXXXI.

BURROUGHS'S MACHINE for grinding and poliſhing glaſs, invented by Mr Burroughs of Southwark; and for which he received from the ſociety for the encouragement of arts a premium of 70l.

This machine conſiſts of a cog-wheel A (fig. 3.), 12 feet in diameter, carrying 72 cogs; which turn a trundle-head B, one foot four inches in diameter, and furniſhed with eight rounds; and alſo a horizontal ſpur-wheel C, of 12 cogs; and one foot eight inches in diameter. The trundle-head B turns a ſpur-wheel D of 10 cogs, and two feet eight inches in diameter. This ſpur-wheel has two cranks, *a b*, in its ſhaft; one of which *a* gives motion to a wooden frame, *c*, about 34 inches long and 19 broad. On the under ſide of this frame are faſtened by ſcrews 12 pieces of poliſhed metal, each five inches and a half long, and three broad, covered with leather; and underneath theſe poliſhers a glaſs-plate cemented in another frame is placed on the bench *d*, and poliſhed with tripoli by the motion given to the upper frame by the crank *a*. The nuts of the ſcrews which faſten the poliſhers to the upper frame are not ſcrewed cloſe to the wood, in order to give the frame room to play; by which contrivance the perpendicular riſe of the crank is avoided, and the motion of the poliſhers is always parallel and equal. The under frame may be moved by the hand in any direction without ſtopping the machine; by which means the plate, when larger than the poliſhing frame can cover in its motion, will be equally poliſhed in every part.

The other crank *b* gives motion to two other poliſhers marked *n*, *o*, which have an alternate motion by the bending of the crank; they move upon the ſame plate, and have an equal number of poliſhers as that already deſcribed.

The ſame crank alſo gives motion to a contrivance repreſented at *e* for poliſhing ſpectacle-glaſſes. It conſiſts of two ſegments of the ſame ſphere; one concave and the other convex. On the latter the glaſſes are cemented; and poliſhed by the former, which is moved by the crank *b*. The convex ſegment may be moved round by the hand without ſtopping the machine, ſo that all the glaſſes on its ſuperficies will be equally poliſhed.

The other ſpur-wheel C, by means of a crank in its ſhaft, gives motion to another frame *g*, employed in grinding the glaſs plates. The rod *h*, extended from the crank *f* to the frame *g*, is faſtened to the latter by means of a pivot, in order to admit of a rotatory motion, as well as that given it by the crank in a longitudinal direction. This rotatory motion is effected by means of a rod of iron *i*, called a *trigger*, ſharp at the extremity next the frame, where it touches the teeth of an horizontal ſpur-wheel, or circular piece of wood, fixed on the grinding plate, while the other end is extended three feet two inches to the centre of motion.

But this contrivance, in which the merit of the machine principally conſiſts, will be much better conceived from a ſmall delineation of it by itſelf (fig. 4.), where F is the crank marked *f* in fig. 3. and turned by the ſpur-wheel C in the ſame figure. G is the trigger, three feet two inches long. I, a roll fixed on the trigger for the rod to ſlide on. H, the horizontal ſpur-wheel, eleven inches in diameter, fixed on the grinding plate; the teeth of which are touched by the trigger; but with a very unequal force, as it will wholly depend upon the grinding-plate's being farther from, or nearer to, the centre of motion of the trigger. By this ſimple contrivance, the grinding-plate has a very compound motion, never moving exactly in the ſame track, and therefore muſt grind the plates equally in every part. Several attempts have been made by others for producing the ſame effect: but without ſucceſs; the grinding-plate always follows the ſame track, and conſequently the plates are ground equally.

Burrow || Burſars.

BURROW, Sir James, maſter of the crown office, was elected F. R. S. and F. A. S. 1751. On the death of Mr Weſt in 1772, he was prevailed on to fill the preſident's chair at the royal ſociety till the anniverſary election, when he reſigned it to Sir John Pringle; and Auguſt 10. 1773, when the ſociety preſented an addreſs to his majeſty, he received the honour of knighthood. He publiſhed two volumes of Reports in 1766; two others in 1771 and 1776; and a volume of Deciſions of the Court of King's Bench upon ſettlement caſes from 1732 to 1772 (to which was ſubjoined An Eſſay of Punctuation), in three parts, 4to, 1768, 1772, 1776. The Eſſay was alſo printed ſeparately in 4to, 1773. He publiſhed, without his name, "A few Anecdotes and Obſervations relating to Oliver Cromwell and his family, ſerving to rectify ſeveral errors concerning him," publiſhed by Nicol. Comn. Papadopoli, in his *Hiſtoria Gymnaſii Patavini*, 1763, 4to. He died in 1782.

BURROWS, holes in a warren, ſerving as a covert for rabbits, &c. A coney's coming out of her burrow is called *bolting*. To catch coneys, they ſometimes lay purſe-nets over the burrows, then put in a terrier cloſe muzzled, which making the creature bolt, ſhe is caught in the net.

BURSA, or Prusa, in *Geography*, the capital of Bithynia in Aſia Minor, ſituated in a fine fruitful plain, at the foot of Mount Olympus, about 100 miles ſouth of Conſtantinople. E. Long. 29. 0. N. Lat. 40. 30.

Bursa-Paſtoris, in *Botany*. See Thlaspi.

Bursa, *Burſe*, originally ſignifies a purſe. In middle-age writers it is more particularly uſed for a little college or hall in a univerſity, for the reſidence of ſtudents, called *burſales* or *burſarii*. In the French univerſities it ſtill denotes a foundation for the maintenance of poor ſcholars in their ſtudies. The nomination to burſes is in the hands of the patrons and founders thereof. The burſes of colleges are not benefices, but mere places aſſigned to certain countries and perſons. A burſe becomes vacant by the burſer's being promoted to a cure.

BURSÆ mucosæ. See Anatomy *Index*.

BURSAR, or Burser, (*Burſarius*), is uſed in middle-age writers for a treaſurer or caſh-keeper. In this ſenſe we meet with burſars of colleges. Conventual burſars were officers in monaſteries, who were to deliver up their account yearly on the day after Michaelmas. The word is formed from the Latin *burſa*, whence alſo the Engliſh word *purſe*; hence alſo the officer, who in a college is called *burſar*, in a ſhip is called *purſer*.

Bursars, or *Burſors*, (*Burſarii*), alſo denote thoſe to whom ſtipends are paid out of a burſe or fund appointed for that purpoſe.

BURSARIA,

Burſaria || Burton.

BURSARIA, the burſary, or exchequer of collegiate and conventual bodies; or the place of receiving, paying, and accounting by the burſarii or burſers.

BURSE, in maters of commerce, denotes a public edifice in certain cities, for the meeting of merchants to negotiate bills, and confer on other matters relating to money and trade. In this ſenſe, burſe amounts to the ſame with what we otherwiſe call an *exchange*.

The firſt place of this kind to which the name *Burſe* was given, Guiechardin aſſures us was at Bruges; and it took its denomination from a hotel adjoining to it, built by a lord of the family de la Bourſe, whoſe arms, which are three purſes, are ſtill found on the crowning over the portal of the houſe. Catel's account is ſomewhat different, viz. that the merchants of Bruges bought a houſe or apartment to meet in, at which was the ſign of the purſe. From this city the name was afterwards transferred to the like places in others, as in Antwerp, Amſterdam, Bergen in Norway, and London. This laſt, anciently known by the name of the *common burſe of merchants*, had the denomination ſince given it by Queen Elizabeth, of the *royal exchange*. The moſt conſiderable burſe is that of Amſterdam, which is a large building, 230 feet long and 130 broad, round which runs a periſtyle 20 feet wide. The columns of the periſtyle, which are 46, are numbered, for the conveniency of finding people. It will hold 4500 perſons.

In the times of the Romans there were public places for the meeting of merchants in moſt of the trading cities of the empire; that built at Rome, in the 259th year after its foundation, under the conſulate of Appius Claudius and Publius Servilius, was denominated the *college of merchants*; ſome remains of it are ſtill to be ſeen, and are known by the modern Romans under the name *loggia*. The Hans towns, after the example of the Romans, gave the name of *colleges* to their burſes.

BURSERA. See Botany *Index*.

BURSTEN, denotes a perſon who has a rupture. See Rupture.

BURTHEN *of a* Ship. See Burden.

BURTON *upon* Trent, a town of Staffordſhire, in England. It had formerly a large abbey; and over the river Trent it has now a famous bridge of free ſtone, about a quarter of a mile in length, ſupported by 37 arches. It conſiſts chiefly of one long ſtreet, which runs from the place where the abbey ſtood to the bridge; and has a good market for corn and proviſions. Burton ale is reckoned the beſt of any brought to London. E. Long. 1. 36. N. Lat. 52. 48.

Burton, a town of Lincolnſhire in England, ſeated on a hill near the river Trent. It is but a ſmall place, and is ſituated in W. Long. 0. 30. N. Lat. 53. 40.

Burton, a town of Weſtmorland in England, ſeated in a valley near a large hill called *Farleton-knot-hill*. It is pretty well built, and lies on the great road from Lancaſter to Carliſle. W. Long. 2. 35. N. Lat. 54. 10.

Burton, *Robert*, known to the learned by the name of *Democritus junior*, was younger brother to William Burton who wrote "The antiquities of Leiceſterſhire," and born of an ancient family at Lindley, in that county, upon the 8th of February 1576. He was educated in grammatical learning in the free ſchool of Sutton Colefield in Warwickſhire; in the year 1593 was ſent to Brazen-noze college in Oxford; and in 1599 was elected ſtudent of Chriſt-church. In 1616, he had the vicarage of St Thomas, in the weſt ſuburb of Oxford, conferred upon him by the dean and canons of Chriſt-church, to the pariſhioners of which, it is ſaid, that he always gave the ſacrament in wafers; and this, with the rectory of Segrave in Leiceſterſhire, given him ſome time after by George lord Berkeley, he held to the day of his death, which happened in January 1639. Burton.

He was a man of general learning; a great philoſopher; an exact mathematician; and (what makes the peculiarity of his character) a very curious calculator of nativities. He was extremely ſtudious, and of a melancholy turn; yet an agreeable companion, and very humorous. *The anatomy of melancholy*, by *Democritus junior*, as he calls himſelf, ſhows, that theſe different qualities were mixed together in his compoſition. This book was printed firſt in 4to, afterwards in folio, in 1624, 1632, 1638, and 1652, to the great emolument of the bookſeller, who, as Mr Wood tells us, got an eſtate by it. Some circumſtances attending his death occaſioned ſtrange ſuſpicions. He died in his chamber at or very near the time which, it ſeems, he had ſome years before predicted from the calculation of his nativity; and this exactneſs made it whiſpered about, that for the glory of aſtrology, and rather than his calculation ſhould fail, he became indeed a *felo de ſe*. This, however, was generally diſcredited; he was buried with due ſolemnity in the cathedral of Chriſt-church, and had a fair monument erected to his memory. He left behind him a very choice collection of books. He bequeathed many to the Bodleian library; and 100l. to Chriſt-church, the intereſt of which was to be laid out yearly in books for their library.

Burton, *John*, D. D. a learned divine, was born in 1696, at Wembworth, in Devonſhire, of which pariſh his father was rector. He was educated at Corpus Chriſti college, Oxford. In 1725, being then proctor and maſter of the ſchools, he ſpoke a Latin oration before the determining bachelor, which is entitled "*Heli*; or, An inſtance of a magiſtrate's erring through unſeaſonable lenity;" written and publiſhed with a view to encourage the ſalutary exerciſe of academical diſcipline; and afterwards treated the ſame ſubject ſtill more fully in four Latin ſermons before the univerſity, and publiſhed them with appendixes. He alſo introduced into the ſchools, Locke, and other eminent modern philoſophers, as ſuitable companions to Ariſtotle; and printed a double ſeries of philoſophical queſtions, for the uſe of the younger ſtudents; from which Mr Johnſon of Magdalene college, Cambridge, took the hint of his larger work of the ſame kind, which has gone through ſeveral editions.

When the ſettling of Georgia was in agitation, Dr Bray, juſtly revered for his inſtitution of parochial libraries, Dr Stephen Hales, Dr Berriman, and other learned divines, intreated Mr Burton's pious aſſiſtance in that undertaking. This he readily gave, by preaching before the ſociety in 1732, and publiſhing his ſermon, with an appendix on the ſtate of that colony; and

he

Bury || Burying-Place.

he afterwards publiſhed an account of the deſigns of the aſſociates of the late Dr Bray, with an account of their proceedings.

About the ſame time, on the death of Dr Edward Littleton, he was preſented by Eton college to the vicarage of Maple-Derham, in Oxfordſhire. Here a melancholy ſcene, which too often appears in the manſions of the clergy, preſented itſelf to his view; a widow, with three infant daughters, without a home, without a fortune: from his compaſſion aroſe love, the conſequence of which was marriage; for Mrs Littleton was handſome, elegant, accompliſhed, ingenious, and had great ſweetneſs of temper. In 1760, he exchanged his vicarage of Maple-Derham for the rectory of Worpleſdon in Surrey. In his advanced age, finding his eyes begin to fail him, he collected and publiſhed, in one volume, all his ſcattered pieces, under the title of *Opuſcula miſcellanea;* and ſoon after died, February 11th, 1771.

BURTON, in the ſea-language, a ſmall tackle conſiſting of two ſingle blocks and may be made faſt any where at pleaſure, for hoiſting ſmall things in and out.

BURY, is ſometimes uſed to denote the hole or den of ſome animal under ground. In this ſenſe we ſay the *bury* of a mole, a tortoiſe, or the like. The grillotalpa, or mole-cricket, digs itſelf a bury with its fore-feet, which are made broad and ſtrong for that purpoſe. Naturaliſts ſpeak of a kind of urchins in the iſland of Maraguan, which have two entries to their buries, one towards the north, the other to the ſouth, which they open and ſhut alternately as the wind happens to lie.

BURY, in *Geography*, a market town of Lancaſhire, about 30 miles ſouth-eaſt of Lancaſter. It is a barony in the family of Albemarle. W. Long. 2. 20. N. Lat. 53. 36.

BURY *St Edmond's*, or *St Edmund's Bury*, the county town of Suffolk, about 12 miles eaſt of Newmarket, and 70 north-eaſt of London. E. Long. 0. 45. N. Lat. 52. 20.

BURYING, the ſame with interment or BURIAL.

BURYING Alive was the puniſhment of a veſtal who had violated her vow of virginity. The unhappy prieſteſs was let down into a deep pit, with bread, water, milk, oil, a lamp burning, and a bed to lie on. But this was only for ſhow; for the moment ſhe was let down, they began to caſt in the earth upon her till the pit was filled up †. Some middle-age writers ſeem to make burying alive (*defoſſio*) the puniſhment of a woman thief. Lord Bacon gives inſtances of the reſurrection of perſons who have been buried alive. The famous Duns Scotus is of the number; who, having been ſeized with a catalepſis, was thought dead, and laid to ſleep among his fathers, but raiſed again by his ſervant in whoſe abſence he had been buried. Bartholin gives an account of a woman, who, on recovering from an apoplexy, could not be convinced but that ſhe was dead, and ſolicited ſo long and ſo earneſtly to be buried, that they were forced to comply; and performed the ceremonies, at leaſt in appearance. The famous emperor Charles V. after his abdication, took it into his head to have his burial celebrated in his lifetime, and aſſiſted at it. See CHARLES V.

† See the article *Veſtals.*

BURYING-Place. The ancients buried out of cities and towns; an uſage which we find equally among Jews, Greeks, and Romans. Among the laſt, burying within the walls was expreſsly prohibited by a law of the 12 tables. The uſual places of interment were in the ſuburbs and fields, but eſpecially by the way-ſides. We have inſtances, however, of perſons buried in the city; but it was a favour allowed only to a few of ſingular merit in the commonwealth. Plutarch ſays, thoſe who had triumphed were indulged in it. Be this as it will, Val. Publicola, and C. Fabricius, are ſaid to have had tombs in the forum: and Cicero adds Tubertus to the number. Lycurgus allowed his Lacedemonians to bury their dead within the city and around their temples, that the youth, being inured to ſuch ſpectacles, might be the leſs terrified with the apprehenſion of death. Two reaſons are alleged why the ancients buried out of cities: the firſt, an opinion that the ſight, touch, or even neighbourhood, of a corpſe defiled a man, eſpecially a prieſt; whence that rule in A. Gellius, that the *flamen Dialis* might not on any account enter a place where there was a grave: the ſecond, to prevent the air from being corrupted by the ſtench of putrified bodies, and the buildings from being endangered by the frequency of funeral fires.

Burying-Place || Buſby.

Burying in churches was not allowed for the firſt 300 years after Chriſt; and the ſame was ſeverely prohibited by the Chriſtian emperors for many ages afterwards. The firſt ſtep towards it appears to have been the practice of erecting churches over the graves of ſome martyrs in the country, and tranſlating the relics of others into churches in the city; the next was, allowing kings and emperors to be buried in the atrium or church-porch. In the 6th century, the people began to be admitted into the church-yards; and ſome princes, founders, and biſhops, into the church. From that time the matter ſeems to have been left to the diſcretion of the biſhop.

BUSBEC, AUGER GISLEN, LORD OF, a perſon illuſtrious on account of his embaſſies, was born at Commines in the year 1522; and educated at the moſt famous univerſities, at Louvain, at Paris, at Venice, at Bologna, and at Padua. He was engaged in ſeveral important employments and negotiations, and particularly was twice ſent ambaſſador by the king of the Romans to the emperor Soliman. He collected inſcriptions; bought manuſcripts; ſearched after rare plants; inquired into the nature of animals; and in his ſecond journey to Conſtantinople, carried with him a painter, that he might be able to communicate to the curious the figures, at leaſt, of the plants and animals that were not well known in the weſt. He wrote a Diſcourſe of the ſtate of the Ottoman empire, and a Relation of his two Journeys to Turkey, which are much eſteemed. He died in 1592.

BUSBY, DR RICHARD, ſon of a gentleman in Weſtminſter, was born at Lutton in Lincolnſhire in 1606. He paſſed through the claſſes in Weſtminſter ſchool, as king's ſcholar; and completed his ſtudies at Chriſt-church, Oxford. In 1640 he was appointed maſter of Weſtminſter ſchool; and by his ſkill and diligence in the diſcharge of this important and laborious office, for the ſpace of 55 years, bred up the greateſt number of eminent men, in church and ſtate, that ever at one time adorned any age or nation. He was extremely ſevere in his ſchool; though he applauded wit

in

Buſh. in his ſcholars, even when it reflected on himſelf. This great man, after a long and healthy life purchaſed by temperance, died in 1695, aged 89; and was buried in Weſtminſter abbey, where there is a fine monument erected for him, with a Latin inſcription. He compoſed ſeveral books for the uſe of his ſchool.

BUSH, Paul, the firſt biſhop of Briſtol, became a ſtudent in the univerſity of Oxford about the year 1513, and in 1518 took the degree of bachelor of arts. He afterwards became a brother of the order called *bonhoms*; of which, after ſtudying ſome time among the friars of St Auſtin (now Wadham college), he was elected provincial. In that ſtation he lived many years; till at length King Henry VIII. being informed of his great knowledge in divinity and phyſic, made him his chaplain, and in 1542 appointed him to the new epiſcopal ſee of Briſtol: but having in the reign of Edward VI. taken a wife, he was, on the acceſſion of Mary, deprived of his dignity, and ſpent the remainder of his life in a private ſtation at Briſtol, where he died in the year 1558, aged 68, and was buried on the north ſide of the choir of the cathedral. Wood ſays, that while he was a ſtudent at Oxford, he was numbered among the celebrated poets of that univerſity; and Pits gives him the character of a faithful Catholic his want of chaſtity notwithſtanding. He wrote, 1. An exhortation to Margaret Burgeſs, wife to John Burgeſs, clothier of King's wood, in the county of Wilts. Lond. printed in the reign of Edward VI. 8vo. 2. Notes on the Pſalms. 3. Treatiſe in praiſe of the croſs. 4. Anſwer to certain queries concerning the abuſe of the maſs. Records, N° 25. 5. Dialogues between Chriſt and the Virgin Mary. 6. Treatiſe of ſalves and curing remedies. 7. A little treatiſe in Engliſh, called *The extirpation of ignorancy*, &c. in verſe, Lond. by Pinſon, 4to. 8. *Carmina diverſa.*

Bush, a term uſed for ſeveral ſhrubs of the ſame kind growing cloſe together: thus we ſay, a *furze-buſh*, *bramble-buſh*, &c.

Bush is ſometimes uſed, in a more general ſenſe, for any aſſemblage of thick branches interwoven and mixed together.

Bush alſo denotes a coronated frame of wood hung out as a ſign of taverns. It takes the denomination from hence, that, anciently, ſigns where wine was ſold were *buſhes* chiefly of ivy, cypreſs, or the like plant, which keeps its verdure long. And hence the Engliſh proverb, "Good wine needs no *buſh*."

Burning-Bush, that buſh wherein the Lord appeared to Moſes at the foot of Mount Horeb, as he was feeding his father-in-law's flocks.

As to the perſon that appeared in the buſh, the text ſays, "That the angel of the Lord appeared unto him in a flame of fire, out of the middle of the buſh;" but whether it was a created angel, ſpeaking in the perſon of God, or God himſelf, or (as the moſt received opinion is) Chriſt the ſon of God, has been matter of ſome controverſy among the learned. Thoſe who ſuppoſe it no more than an angel, ſeem to imply that it would be a diminution of the majeſty of God, to appear upon every occaſion, eſpecially when he has ſuch a number of celeſtial miniſters, who may do the buſineſs as well. But conſidering that God is preſent everywhere, the notification of his preſence by ſome outward ſign in one determinate place (which is all we mean by his appearance), is in our conception leſs laborious (if any thing laborious could be conceived of God) than a delegation of angels upon every turn from heaven, and ſeems in the main to illuſtrate rather than debaſe the glory of his nature and exiſtence. But however this be, it is plain that the angel here ſpoken of was no created being, from the whole context, and eſpecially from his ſaying, "I am the Lord God, the Jehovah," &c. ſince this is not the language of angels, who are always known to expreſs themſelves in ſuch humble terms as theſe, "I am ſent from God; I am thy fellow ſervant," &c. It is a vain pretext to ſay, that an angel, as God's ambaſſador, may ſpeak in God's name and perſon; for what ambaſſador of any prince ever yet ſaid, "I am the king?" Since therefore no angel, without the guilt of blaſphemy, could aſſume theſe titles; and ſince neither God the Father nor the Holy Ghoſt, are ever called by the name of *angel*, i. e. "meſſenger, or perſon ſent," whereas God the Son is called by the prophet Malachi (chap. iii. 1.), "The angel of the covenant;" it hence ſeems to follow, that this angel of the Lord was God the Son, who might very properly be called an *angel*, becauſe in the fulneſs of time he was ſent into the world in our fleſh, as a meſſenger from God, and might therefore make theſe his temporary apparitions preſages and forerunners, as it were, of his more ſolemn miſſion. The emblem of the burning-buſh is uſed as the ſeal of the church of Scotland, with this motto: *Nec tamen conſumebatur*; i. e. "Though burning, is never conſumed."

Buſhel. BUSHEL, a meaſure of capacity for things dry; as grains, pulſe, dry fruits, &c. containing four pecks, or eight gallons, or one eighth of a quarter.

Du Cange derives the word from *buſſellus*, *buſtellus*, or *biſſellus*, a diminutive of *buz*, or *buza*, uſed in the corrupt Latin for the ſame thing; others derive it from *buſſulus*, an *urn*, wherein lots were caſt; which ſeems to be a corruption from *buxulus*. *Buſſellus* appears to have been firſt uſed for a liquid meaſure of wine, equal to eight gallons. *Octo libræ faciunt galonem vini, et octo galones vini faciunt* buſſellum *London, quæ eſt octava pars quarterii.* It was ſoon after tranſferred to the dry meaſure of corn of the ſame quantity. —*Pondus octo librorum frumenti facit* buſſellum, *de quibus octo conſiſtit quarterium.*

By 12 Henry VII. c. 5. a buſhel is to contain 8 gallons of wheat; the gallon 8 pounds of wheat troy weight; the pound 12 ounces troy-weight; the ounce 20 ſhillings; and the ſterling 32 grains, or corn of wheat, growing in the midſt of the ear. This ſtandard buſhel is kept in the Exchequer; when being filled with common ſpring water, and the water meaſured before the houſe of commons in 1696, in a regular parallelopiped, it was found to contain 2145,6 ſolid inches; and the ſaid water being weighed, amounting to 1131 ounces and 14 penny-weights troy. Beſides the ſtandard or legal buſhel, we have ſeveral local buſhels, of different dimenſions in different places. At Abington and Andover, a buſhel contains nine gallons: at Appleby and Penrith, a buſhel of peaſe, rye, and wheat, contains 16 gallons: of barley, big, malt, mixt malt, and oats, 20 gallons. A buſhel contains, at Carliſle, 24 gallons; at Cheſter, a buſhel of wheat, rye, &c. contains 32 gallons, and of oats 40: at Dorcheſter, a buſhel of malt and oats con-

Buſiris || Buſkin

tains 10 gallons; at Falmouth, the buſhel of ſtricken coals is 16 gallons, of other things 20, and uſually 21 gallons; at Kingſton upon Thames, the buſhel contains $8\frac{1}{2}$; at Newbury 9; at Wycomb and Reading, $8\frac{3}{4}$; at Stamford, 16 gallons. Houghton. Collect. tom. i. n. 46. p. 42.

At Paris, the buſhel is divided into 2 half-buſhels; the half-buſhel into 2 quarts; the quart into 2 half-quarts; the half-quart into 2 litrons; and the litron into 2 half-litrons. By a ſentence of the provoſt of the merchants of Paris, the buſhel is to be 8 inches $2\frac{1}{2}$ lines high, and 10 inches in diameter; the quart 4 inches 9 lines high, and 6 inches 9 lines wide; the half-quart 4 inches 3 lines high, and 5 inches diameter; the litron $3\frac{1}{2}$ inches high, and 3 inches 10 lines in diameter. Three buſhels make a minot, 6 a mine, 12 a ſeptier, and 144 a muid. In other parts of France the buſhel varies: $14\frac{1}{8}$ buſhels of Amboiſe and Tours make the Paris ſeptier. Twenty buſhels of Avignon make 3 Paris ſeptiers. Twenty buſhels of Blois make 1 Paris ſeptier. Two buſhels of Bourdeaux make 1 Paris ſeptier. Thirty-two buſhels of Rochel make 19 Paris ſeptiers. Oats are meaſured in a double proportion to other grains; ſo that 24 buſhels of oats make a ſeptier, and 248 a muid. The buſhel of oats is divided into 5 picotins, the picotin into 2 half-quarts, or 4 litrons. For ſalt 4 buſhels make one minot, and 6 a ſeptier. For coals 8 buſhels make a minot, 16 a mine, and 320 a muid. For lime, 3 buſhels make a minot, and 48 minots a muid. Such were the meaſures by buſhel before the revolution; for the changes that have ſince taken place, ſee MEASURE and WEIGHT.

BUSIRIS, in *Ancient Geography*, a city of the Lower Egypt, to the ſouth of Leontopolis, on that branch of the Nile called Buſiriticus: Built by Buſiris, noted for his cruelty, and ſlain by Hercules, (Ovid, Virgil, Diodorus Siculus). Strabo denies ſuch a tyrant ever exiſted; Iſocrates has written his panegyric. In this city there ſtood a grand temple of Iſis, which gave it the appellation of the city of Iſis. It was deſtroyed on a revolt by Diocleſian.

BUSIRITICUS FLUVIUS, in *Ancient Geography*, that branch of the Nile which empties itſelf at the mouth called Oſtium Pathmeticum, or Phatniticum, (Ptolemy); alſo a part, according to an ancient map at the Oſtium Mindeſium; this river, or branch, dividing itſelf at Dioſpolis into two branches; called Buſiriticus, from the city Buſiris, which ſtood on its left, or weſt branch. It is the ſecond branch of the Nile, reckoning from the eaſt.

BURITICUS Nomos, in *Ancient Geography*, a prefecture, or diviſion of the Lower Egypt; ſo called from the city Buſiris, (Herodotus, Pliny, Ptolemy.)

BUSITIS, in *Ancient Geography*, a diſtrict of Arabia Deſerta; ſo called from Bus, or Buz, Nahor's ſecond ſon; the country of Elihu, the fourth interlocutor in Job; called *Buzetes*, by the Septuagint.

BUSKIN, a kind of ſhoe, ſomewhat in manner of a boot, and adapted to either foot, and worn by either ſex. This part of dreſs, covering both the foot and mid-leg, was tied underneath the knee; it was very rich and fine, and principally uſed on the ſtage by actors in tragedy. It was of a quadrangular form; and the ſole was ſo thick, as that, by means thereof, men of the ordinary ſtature might be raiſed to the pitch and elevation of the heroes they perſonated. The colour was generally purple on the ſtage; herein it was diſtinguiſhed from the ſock worn in comedy, that being only a low common ſhoe. The buſkin ſeems to have been worn not only by actors but by girls, to raiſe their height; travellers and hunters alſo made uſe of it, to defend themſelves from the mire. In claſſic authors, we frequently find the buſkin uſed to ſignify tragedy itſelf, in regard it was a mark of tragedy on the ſtage. It was alſo to be underſtood for a lofty ſtrain or high ſtyle.

Buſs || Buſtuarii.

BUSS, in maritime affairs, a ſmall ſea veſſel, uſed by us and the Dutch in the herring-fiſhery, commonly from 48 to 60 tons burden, and ſometimes more: a buſs has two ſmall ſheds or cabins, one at the prow and the other at the ſtern; that at the prow ſerves for a kitchen. Every buſs has a maſter, an aſſiſtant, a mate, and ſeamen in proportion to the veſſel's ſize; the maſter commands in chief, and without his expreſs orders the nets cannot be caſt or taken up; the aſſiſtant has the command after him; and the mate next, whoſe buſineſs is to ſee the ſeamen manage their rigging in a proper manner, to mind thoſe who draw in their nets, and thoſe who kill, gut, and cure the herrings as they are taken out of the ſea: the ſeamen generally engage for a whole voyage in the lump. The proviſions which they take on board the buſſes, conſiſt commonly in biſcuit, oat meal, and dryed or ſalt fiſh; the crew being content for the reſt with what freſh fiſh they catch. See FISHERIES.

BUST, or BUSTO, in *Sculpture*, denotes the figure or portrait of a perſon in relievo, ſhowing only the head, ſhoulders, and ſtomach, the arms being lopped off: ordinarily placed on a pedeſtal or conſole.

In ſpeaking of an antique, we ſay the head is marble, and the buſt porphyry, or bronze, that is, the ſtomach and ſhoulders. Felibien obſerves, that though in painting, one may ſay a figure appears in buſto, yet it is not properly called a *buſt*, that word being confined to things in relievo.

The buſt is the ſame with what the Latins called *Herma*, from the Greek Hermes, Mercury, the image of that god being frequently repreſented in this manner amongſt the Athenians.

BUST is alſo uſed, eſpecially by the Italians, for the trunk of a human body, from the neck to the hips.

BUSTA Gallica, was a place in ancient Rome, wherein the bones of the Gauls, who firſt took the city, and were ſlain by Camillus, were depoſited. It differed from *BUSTA Gallorum*, a place on the Apennines, thus called by reaſon of many thouſands of Gauls killed there by Fabius.

BUSTARD. See OTIS, ORNITHOLOGY *Index*.

BUSTUARIÆ MOECHÆ, according to ſome, women that were hired to accompany the funeral and lament the loſs of the deceaſed: but others are of opinion, that they were rather the more common proſtitutes, that ſtood among the tombs, graves, and other ſuch lonely places.

BUSTUARII, in Roman antiquity, gladiators who fought about the buſtum or funeral pile of a perſon of diſtinction, that the blood which was ſpilt might ſerve as a ſacrifice to the infernal gods, and render them more propitious to the manes of the deceaſed. This cuſtom was introduced in the room of the more inhu-

man

Buſtum || Butcher-Iſland.

man one of ſacrificing captives at the buſtum, or on the tombs of warriors.

BUSTUM, in antiquity, denotes a pyramid or pile of wood, whereon were anciently placed the bodies of the deceaſed, in order to be burnt.

The Romans borrowed the cuſtom of burning their dead from the Greeks. The deceaſed, crowned with flowers, and dreſſed in his richeſt habits, was laid on the buſtum. Some authors ſay, it was only called *buſtum*, after the burning, *quaſi bene uſtum:* before the burning it was more properly called *pyra;* during it, *rogus;* and afterwards, *buſtum*. When the body was only burnt there, and buried elſewhere, the place was not properly called *buſtum*, but *uſtrina*, or *uſtrinum*.

BUSTUM, in the Campus Martius, was a ſtructure whereon the emperor Auguſtus firſt, and after him the bodies of his ſucceſſors, were burnt. It was built of white ſtone, ſurrounded with an iron palliſade, and planted withinſide with alder trees.

BUSTUM was alſo figuratively applied to denote any tomb. Whence thoſe phraſes, *facere buſtum*, *violare buſtum*, &c.

BUSTUM of an Altar, was the hearth or place where the fire was kindled.

BUTCHER, a perſon who ſlaughters cattle for the uſe of the table, or who cuts up and retails the ſame.

Among the ancient Romans, there were three kinds of eſtabliſhed butchers, whoſe office it was to furniſh the city with the neceſſary cattle, and to take care of preparing and vending their fleſh. The ſuarii provided hogs; the pecuarii or boarii, other cattle, eſpecially oxen; and under theſe was a ſubordinate claſs, whoſe office was to kill, called *lanii*, and *carnifices*.

To exerciſe the office of butcher among the Jews with dexterity, was of more reputation than to underſtand the liberal arts and ſciences. They have a book concerning ſhamble-conſtitution; and in caſe of any difficulty, they apply to ſome learned rabbi for advice: nor was any allowed to practiſe this art, without a licenſe in form; which gave the man, upon evidence of his abilities, a power to kill meat, and others to eat what he killed; provided he carefully read every week for one year, and every month the next year, and once a quarter during his life, the conſtitution abovementioned.

We have ſome very good laws for the better regulation and preventing the abuſes committed by butchers, A butcher that ſells ſwine's fleſh meaſled, or dead of the murrain, for the firſt offence ſhall be amerced; for the ſecond, have the pillory; for the third, be impriſoned, and make fine; and for the fourth, abjure the town. Butchers not ſelling meat at reaſonable prices ſhall forfeit double the value, leviable by warrant of two juſtices of the peace. No butcher ſhall kill any fleſh in his ſcalding-houſe, or within the walls of London, on pain to forfeit for every ox ſo killed 12d. and for every other beaſt, 8d. to be divided betwixt the king and the proſecutor.

BUTCHER-Bird. See LANIUS, ORNITHOLOGY *Index.*

BUTCHER-Broom. See RUSCUS, BOTANY *Index.*

BUTCHER-Iſland, in the Eaſt Indies, a ſmall iſland about two miles long and ſcarce one broad. It has its name from cattle being kept there for the uſe of Bombay, from which it is about three miles diſtant. It has a ſmall fort, but of very little conſequence.

Bute, Buteſhire.

BUTE, an iſland lying to the weſt of Scotland, being ſeparated from Cowal, a diſtrict of Argyllſhire, only by a narrow channel. In length it is about 18 miles; the broadeſt part from eaſt to weſt is about five. Part of it is rocky and barren; but from the middle ſouthwards, the ground is cultivated, and produces peaſe, oats, and barley. Here is a quarry of red ſtone, which the natives have uſed in building a fort and chapel in the neighbourhood of Rothſay, which is a very ancient royal borough, head town of the ſhire of Bute and Aran; but very thinly peopled, and maintained chiefly by the herring fiſhery, with the profits of which all the rents of this iſland are chiefly paid. On the north ſide of Rothſay, are the ruins of an ancient fort, with its drawbridge, chapel, and barracks. Here are likewiſe the remains of ſome Daniſh towers. The natives are healthy and induſtrious, ſpeak the Erſe and the dialect of the Lowlands indifferently, and profeſs the Proteſtant religion. The iſland is divided into two pariſhes, accommodated with four churches; and belongs chiefly to the earl of Bute, who poſſeſſes an elegant ſeat on the eaſt ſide of the iſland. The name of this iſle has by ſeveral authors, and in different periods, been very differently written, as *Bote*, *Both*, *Bothe*, *Boot*, but now generally *Bute*. Our ancient writers ſuppoſe that it derived its name from a cell erected therein by St Brendan, an Iriſh abbot who flouriſhed in the 6th century, becauſe in his language ſuch a cell was called *Both*. It is, however, probable, that this name was of great antiquity, ſince we find it denominated *Botis* by the anonymous geographer of Ravenna. It was from very early times part of the patrimony of the Stuarts: large poſſeſſions in it were granted to Sir John Stuart, ſon of Robert II. by his beloved miſtreſs Elizabeth More; and it has continued in that line to the preſent time.

BUTESHIRE, comprehends the iſlands of Bute, Arran, the greater and leſſer Cumbray, and *Inch-marnoc*. This ſhire and that of Caithneſs ſend a member to parliament alternately. The earl of Bute is admiral of the county, by commiſſion from his majeſty; but no way dependent on the lord high admiral of Scotland: ſo that if any maritime caſe occurs within this juriſdiction, (even crimes of as high a nature as murder or piracy), his lordſhip, by virtue of his powers as admiral, is ſufficient judge, or he may delegate his authority to any deputies.

The following is a view of the population of this county at two different periods, taken from the Statiſtical Hiſtory of Scotland.

	Pariſh.	Population in 1755.	Population in 1790—1798.
Bute.	Rothſay,	2222	4032
	Kingarth,	998	727
Arran.	Kilbride,	1369	2545
	Kilmorie,	2127	3209
	Total,	6866	10,563
			6866
		Increaſe,	3697

Buteo, Butler.

BUTEO, the trivial name of a ſpecies of FALCO. See ORNITHOLOGY *Index*.

BUTLER, CHARLES, a native of Wycomb in the county of Bucks, and a maſter of arts in Magdalen college, Oxford, publiſhed a book with this title, "The principles of muſic in ſinging and ſetting; with the twofold uſe thereof, eccleſiaſtical and civil." Quarto, London 1636. The author of this book was a perſon of ſingular learning and ingenuity, which he manifeſted in ſundry other works enumerated by Wood in the *Athen. Oxon.* Among the reſt is an Engliſh grammar, publiſhed in 1633, in which he propoſes a ſcheme of regular orthography, and makes uſe of characters, ſome borrowed from the Saxon, and others of his own invention, ſo ſingular, that we want types to exhibit them: and of this imagined improvement he appears to have been ſo fond, that all his tracts are printed in like manner with his grammar; the conſequence whereof has been an almoſt general diſguſt to all that he has written. His "Principles of Muſic" is, however, a very learned, curious, and entertaining book; and, by the help of the advertiſement from the printer to the reader, prefixed to it, explaining the powers of the ſeveral characters made uſe of by him, may be read to great advantage, and may be conſidered a judicious ſupplement to Morley's introduction,

BUTLER, *Samuel*, a celebrated poet, was the ſon of a reputable Worceſterſhire farmer, and was born in 1612. He paſſed ſome time at Cambridge, but was never matriculated in that univerſity. Returning to his native country, he lived ſome years as clerk to a juſtice of peace; where he found ſufficient time to apply himſelf to hiſtory, poetry, and painting. Being recommended to Elizabeth counteſs of Kent, he enjoyed in her houſe, not only the uſe of all kinds of books, but the converſation of the great Mr Selden, who often employed Butler to write letters, and tranſlate for him. He lived alſo ſome time with Sir Samuel Luke, a gentleman of an ancient family in Bedfordſhire, and a famous commander under Oliver Cromwell: and he is ſuppoſed at this time to have wrote, or at leaſt to have planned, his celebrated *Hudibras;* and under that character to have ridiculed the knight. The poem itſelf furniſhes this key; where, in the firſt canto, Hudibras ſays,

"'Tis ſung, there is a valiant mamaluke
"In foreign land yclep'd — —
"To whom we oft have been compar'd
"For perſon, parts, addreſs, and beard."

After the Reſtoration, Mr Butler was made ſecretary to the earl of Carbury, lord preſident of Wales, who appointed him ſteward of Ludlow caſtle, when the court was revived there. No one was a more generous friend to him than the earl of Dorſet and Middleſex, to whom it was owing that the court taſted his *Hudibras*. He had promiſes of a good place from the earl of Clarendon, but they were never accompliſhed; though the king was ſo much pleaſed with the poem, as often to quote it pleaſantly in converſation. It is indeed ſaid, that Charles ordered him the ſum of 3000l.: but the ſum being expreſſed in figures, ſomebody through whoſe hands the order paſſed, by cutting off a cypher reduced it to 300l. which, though it paſſed the offices without fees, proved not ſufficient to pay what he then owed; ſo that Butler was not a ſhilling the better for the king's bounty. He died in 1680: and though he met with many diſappointments, was never reduced to any thing like want, nor did he die in debt. Mr Granger obſerves, that Butler "ſtands without rival in burleſque poetry. His Hudibras (ſays he) is in its kind, almoſt as great an effort of genius, as the Paradiſe Loſt itſelf. It abounds with uncommon learning, new rhimes, and original thoughts. Its images are truly and naturally ridiculous. There are many ſtrokes of temporary ſatire, and ſome characters and alluſions which cannot be diſcovered at this diſtance of time."

Butler, Butlerage.

BUTLER, *Joſeph*, late biſhop of Durham, a prelate diſtinguiſhed by his piety and learning, was the youngeſt ſon of Mr Thomas Butler, a reputable ſhopkeeper at Wantage in Berkſhire, where he was born in the year 1692. His father, who was a Preſbyterian, obſerving that he had a ſtrong inclination to learning, after his being at a grammar-ſchool, ſent him to an academy in Glouceſterſhire, in order to qualify him for a diſſenting miniſter; and while there, he wrote ſome remarks on Dr Clarke's firſt ſermon at Boyle's lecture. Afterwards, reſolving to conform to the eſtabliſhed church, he ſtudied at Oriel college, where he contracted an intimate friendſhip with Mr Edward Talbot, ſon of the biſhop of Durham, and brother to the lord chancellor, who laid the foundation of his ſubſequent advancement. He was firſt appointed preacher at the Rolls, and rector of Haughton and Stanhope, two rich benefices in the biſhopric of Durham. He quitted the Rolls in 1726; and publiſhed in 8vo, a volume of ſermons, preached at that chapel. After this he conſtantly reſided at Stanhope, in the regular diſcharge of all the duties of his office, till the year 1733, when he was called to attend the lord chancellor Talbot as his chaplain, who gave him a prebend in the church of Rocheſter. In the year 1736, he was appointed clerk of the cloſet to Queen Caroline, whom he attended every day, by her majeſty's ſpecial command, from ſeven to nine in the evening. In 1738 he was appointed to the biſhopric of Briſtol; and not long afterwards to the deanery of St Paul's, London. He now reſigned his living of Stanhope. In the year 1746, he was made clerk of the cloſet to the king; and in 1750, was tranſlated to Durham. This rich preferment he enjoyed but a ſhort time; for he died at Bath June 16. 1752. His corpſe was interred in the cathedral at Briſtol; where there is a monument, with an inſcription, erected to his memory. He died a bachelor. His deep learning and comprehenſive mind appear ſufficiently in his writings, particularly in that excellent treatiſe entitled, *The Analogy of Religion, natural and revealed, to the Conſtitution and Courſe of Nature*, publiſhed in 8vo, 1736.

BUTLER, the name anciently given to an officer in the court of France, being the ſame as the grand echanſon, or great cupbearer of the preſent times.

BUTLER, in the common acceptation of the word, is an officer in the houſes of princes and great men, whoſe principal buſineſs is to look after the wine, plate, &c.

BUTLERAGE of wine, is a duty of 2s. for every ton of wine imported by merchant ſtrangers; being a compoſition in lieu of the liberties and freedoms granted

Butment || Butter.

ed to them by King John and Edward I. by a charter called *charta mercatoria.*

Butlerage was originally the only cuſtom that was payable upon the importation of wines, and was taken and received by virtue of the regal prerogative, for the proper uſe of the crown. But for many years paſt, there having been granted by parliament ſubſidies to the kings of England, and the duty of butlerage not repealed, but confirmed, they have been pleaſed to grant the ſame way to ſome noblemen, who by virtue of ſuch grant, is to enjoy the full benefit and advantage thereof, and may cauſe the ſame to be collected in the ſame manner that the kings themſelves were formerly wont to do.

BUTMENT. Butments of arches are the ſame with buttreſſes. They anſwer to what the Romans call *fulcas*, the French *culees* and *butees*.

Butments, or *Abutments*, of a bridge, denote the two maſſives at the end of a bridge, whereby the two extreme arches are ſuſtained and joined with the ſhore on either ſide.

BUTOMUS, the Flowering-rush, or *Water-gladiole*. See Botany *Index*.

BUTRINTO, a port-town of Epirus, or Canina, in Turkey in Europe, ſituated oppoſite to the iſland of Corfu, at the entrance of the gulf of Venice. E. Long. 20. 40. N. Lat. 39. 45.

BUTT is uſed for a veſſel, or meaſure of wine, containing two hogſheads, or 126 gallons; otherwiſe called *pipe*. A butt of currants is from 1500 to 2200 pounds weight.

Butts, or *Butt-ends*, in the ſea-language, are the fore ends of all planks under water, as they riſe, and are joined one end to another.—Butt-ends in great ſhips are moſt carefully bolted; for if any one of them ſhould ſpring or give way, the leak would be very dangerous and difficult to ſtop.

Butts, the place where archers meet with their bows and arrows to ſhoot at a mark, which is called ſhooting at the *butts*: (See Archery.)—Alſo *butts* are the ſhort pieces of land in arable ridges and furrows.

BUTTER, a fat unctuous ſubſtance, prepared from milk by beating or churning.

It was late ere the Greeks appear to have had any notion of butter; their poets make no mention of it, and are yet frequently ſpeaking of milk and cheeſe.

The Romans uſed butter no otherwiſe than as a medicine, never as a food.

According to Beckman, the invention of butter belongs neither to the Greeks nor the Romans. The former, he thinks, derived their knowledge of butter from the Scythians, the Thracians and Phrygians; and the latter from the people of Germany.

The ancient Chriſtians of Egypt burnt butter in their lamps inſtead of oil; and in the Roman churches, it was anciently allowed, during Chriſtmas time, to burn butter inſtead of oil, on account of the great conſumption of it otherwiſe.

Butter is the fat, oily, and inflammable part of the milk. This kind of oil is naturally diſtributed through all the ſubſtance of the milk in very ſmall particles, which are interpoſed betwixt the caſeous and ſerous parts, amongſt which it is ſuſpended by a ſlight adheſion, but without being diſſolved. It is in the ſame ſtate in which oil is in emulſions: hence the ſame whiteneſs of milk and emulſions; and hence, by reſt, the oily parts ſeparate from both theſe liquors to the ſurface, and form a cream. See Emulsion. Butter.

When butter is in the ſtate of cream, its proper oily parts are not yet ſufficiently united together to form a homogeneous maſs. They are ſtill half ſeparated by the interpoſition of a pretty large quantity of ſerous and caſeous particles. The butter is completely formed by preſſing out theſe heterogeneous parts by means of continued percuſſion. It then becomes an uniform ſoft maſs.

Freſh butter which has undergone no change, has ſcarce any ſmell; its taſte is mild and agreeable; it melts with a weak heat, and none of its principles are diſengaged by the heat of boiling water. Theſe properties prove, that the oily part of butter is of the nature of the fat, fixed, and mild oils obtained from many vegetable ſubſtances by expreſſion. See Oils.—The half fluid conſiſtence of butter, as of moſt other concrete oily matters, is thought to be owing to a conſiderable quantity of acid united with the oily part; which acid is ſo well combined, that it is not perceptible while the butter is freſh and has undergone no change; but when it grows old, and undergoes ſome kind of fermentation, then the acid is diſengaged more and more; and this is the cauſe that butter, like oils of the ſame kind, becomes rancid by age.

Butter is conſtantly uſed in food, from its agreeable taſte: but to be wholeſome, it muſt be very freſh and free from rancidity, and alſo not fried or burnt; otherwiſe its acrid and even cauſtic acid, being diſengaged, diſorders digeſtion, renders it difficult and painful, excites acrid empyreumatic belchings, and introduces much acrimony into the blood. Some perſons have ſtomachs ſo delicate, that they are even affected with theſe inconveniences by freſh butter and milk. This obſervation is alſo applicable to oil, fat, chocolate, and in general to all oleaginous matters.

For the making of butter ſee Agriculture *Index*.

The trade in butter is very conſiderable. Some compute 50,000 tons annually conſumed in London. It is chiefly made within 40 miles round the city. Fifty thouſand firkins are ſaid to be ſent yearly from Cambridge and Suffolk alone: each firkin containing 56lbs. Utoxeter in Staffordſhire is a market famous for good butter, inſomuch that the London merchants have eſtabliſhed a factory there for that article. It is bought by the pot, of a long cylindrical form, weighing 14lb.

Shower of Butter. Naturaliſts ſpeak of ſhowers and dews of a butyraceous ſubſtance. In 1695, there fell in Ireland, during the winter and enſuing ſpring, a thick yellow dew, which had the medicinal properties of butter.

Butter, among chemiſts, a name given to ſeveral preparations, on account of their conſiſtence reſembling that of butter; as butter of antimony, &c. See Chemistry *Index*.

Butter-Bur. See Tussilago, Botany *Index*.

Butter-Milk, the milk which remains after the butter is produced by churning. Butter-milk is eſteemed an excellent food, in the ſpring eſpecially, and is particularly

Butter-wort || Button.

larly recommended in hectic fevers. Some make curds of butter-milk, by pouring into it a quantity of new-milk hot.

Butter-Wort. See PINGUICULA, BOTANY *Index.*

BUTTERFLY, the Engliſh name of a numerous genus of inſects. See PAPILIO, ENTOMOLOGY *Index.*

Butterfly-Shell. See VOLUTA, CONCHOLOGY *Index.*

Method of preſerving BUTTERFLIES. See INSECTS.

Edward's Hiſt. of Birds, p. 122 vol. ii.

Method of making Pictures of BUTTERFLIES. "Take butterflies or field moths, either thoſe catched abroad, or ſuch as are taken in caterpillars and nurſed in the houſe till they be flies; clip off their wings very cloſe to their bodies, and lay them on clean paper, in the form of a butterfly when flying; then have ready prepared gum arabic that hath been ſome time diſſolved in water, and is pretty thick; if you put a drop of ox-gall into a ſpoonful of this, it will be better for the uſe; temper them well with your finger, and ſpread a little of it on a piece of thin white paper, big enough to take both ſides of your fly; when it begins to be clammy under your finger, the paper is in proper order to take the feathers from the wings of the fly; then lay the gummed ſide on the wings, and it will take them up: then double your paper ſo as to have all the wings between the paper; then lay it on a table, preſſing it cloſe with your fingers; and you may rub it gently with ſome ſmooth hard thing; then open the paper and take out the wings, which will come forth tranſparent: the down of the upper and under ſide of the wings, ſticking to the gummed paper, form a juſt likeneſs of both ſides of the wings in their natural ſhapes and colours. The nicety of taking off flies depends on a juſt degree of moiſture of the gummed paper: for if it be too wet, all will be blotted and confuſed; and if too dry, your paper will ſtick ſo faſt together, that it will be torn in ſeparation. When you have opened your gummed papers, and they are dry, you muſt draw the bodies from the natural ones, and paint them in water colours: you muſt take paper that will bear ink very well for this uſe; for ſinking paper will ſeparate with the reſt, and ſpoil all."

BUTTERIS, in the manege, an inſtrument of ſteel, fitted to a wooden handle, wherewith they pare the foot, or cut off the hoof, of a horſe.

BUTTOCK *of a* SHIP, is that part of her which is her breadth right aſtern, from the tack upwards; and a ſhip is ſaid to have a broad or a narrow buttock, according as ſhe is built broad or narrow at the tranſum.

BUTTON, an article in dreſs, whoſe form and uſe are too well known to need deſcription. They are made of various materials, as mohair, ſilk, horſe hair, metal, &c.

Method of making common BUTTONS. Common buttons are generally made of mohair; ſome indeed are made of ſilk, and others of thread; but the latter are of a very inferior ſort. In order to make a button, the mohair muſt be previouſly wound on a bobbin; and the mould fixed to a board by means of a bodkin thruſt through the hole in the middle of it. This being done, the workman wraps the mohair round the mould in three, four, or ſix columns, according to the button.

Horſe-hair BUTTONS. The moulds of theſe buttons are covered with a kind of ſtuff compoſed of ſilk and hair; the warp being belladine ſilk, and the ſhoot horſe hair. This ſtuff is wove with two ſelvages, in the ſame manner and in the ſame loom as ribbands. It is then cut into ſquare pieces proportional to the ſize of the button, wrapped round the moulds, and the ſelvages ſtitched together, which form the under part of the button. Button.

Cleanſing of BUTTONS. A button is not finiſhed when it comes from the maker's hands; the ſuperfluous hair and hubs of ſilk muſt be taken off, and the button rendered gloſſy and beautiful before it can be ſold. This is done in the following manner: A quantity of buttons are put into a kind of iron ſieve, called by workmen a *ſingeing box.* Then a little ſpirit of wine being poured into a kind of ſhallow iron diſh, and ſet on fire, the workman moves and ſhakes the ſingeing box, containing the buttons, briſkly over the flame of the ſpirit, by which the ſuperfluous hairs, hubs of ſilk, &c. are burnt off, without damaging the buttons. Great care, however, muſt be taken that the buttons in the ſingeing box be kept continually in motion; for if they are ſuffered to reſt over the flame, they will immediately burn. When all theſe looſe hairs, &c. are burnt off by the flame of the ſpirit, the buttons are taken out of the ſingeing box, and put, with a proper quantity of the crumbs of bread, into a leather bag, about three feet long, and of a conical ſhape; the mouth or ſmaller end of which being tied up, the workman takes one of the ends in one hand and the other in the other, and ſhakes the hand briſkly with a particular jerk. This operation cleanſes the buttons, renders them very gloſſy, and fit for ſale.

Gold-twiſt BUTTONS. The mould of theſe buttons is firſt covered in the ſame manner with that of common buttons. This being done, the whole is covered with a thin plate of gold or ſilver, and then wrought over of different forms, with purple and gimp. The former is a kind of thread compoſed of ſilk and gold wire twiſted together; and the latter, capillary tubes of gold or ſilver, about the tenth of an inch long. Theſe are joined together by means of a fine needle, filled with ſilk, thruſt through their apertures, in the ſame manner as beads or bugles.

The manner of making Metal BUTTONS. The metal with which the moulds are intended to be covered is firſt caſt into ſmall ingots, and then flatted into thin plates or leaves, of the thickneſs intended, at the flatting mills; after which it is cut into ſmall round pieces proportionable to the ſize of the mould they are intended to cover, by means of proper punches on a block of wood covered with a thick plate of lead. Each piece of metal thus cut out of the plate is reduced into the form of a button, by beating it ſucceſſively in ſeveral cavities, or concave moulds, of a ſpherical form, with a convex puncheon of iron, always beginning with the ſhalloweſt cavity of the mould, and proceeding to the deeper, till the plate has acquired the intended form: and the better to manage ſo thin a plate, they form ten, twelve, and ſometimes even twenty-four, to the cavities, or concave moulds, at once; often nealing the metal during the operation, to make it more ductile. This plate is generally called by workmen the *cap of the button.*

The form being thus given to the plates or caps, they

Button. they ſtrike the intended impreſſion on the convex ſide. by means of a ſimilar iron puncheon, in a kind of mould engraven *en creux*, either by the hammer or the preſs uſed in coining. The cavity or mould, wherein the impreſſion is to be made, is of a diameter and depth ſuitable to the ſort of button intended to be ſtruck in it; each kind requiring a particular mould. Between the puncheon and the plate is placed a thin piece of lead, called by workmen a *hob*, which greatly contributes to the taking off all the ſtrokes of the engraving; the lead, by reaſon of its ſoftneſs, eaſily giving way to the parts that have relievo, and as eaſily inſinuating itſelf into the traces or indentures.

The plate thus prepared makes the cap or ſhell of the button. The lower part is formed of another plate, in the ſame manner, but much flatter, and without any impreſſion. To the laſt or under plate is ſoldered a ſmall eye made of wire, by which the button is to be faſtened.

The two plates being thus finiſhed, they are ſoldered together with ſoft ſolder, and then turned in a lathe. Generally indeed they uſe a wooden mould, inſtead of the under plate; and in order to faſten it, they paſs a thread or gut acroſs, through the middle of the mould, and fill the cavity between the mould and the cap with cement, in order to render the button firm and ſolid; for the cement entering all the cavities formed by the relievo of the other ſide, ſuſtains it, prevents its flattening, and preſerves its boſſe or deſign.

Button, in the manege. Button of the reins of a bridle, is a ring of leather, with the reins paſſed through it, which runs all along the length of the reins. To put a horſe under the button, is when a horſe is ſtopped without a rider upon his back, the reins being laid on his neck, and the button lowered ſo far down that the reins bring in the horſe's head, and fix it to the true poſture or carriage. It it not only the horſes which are managed in the hand that muſt be put under the button; for the ſame method muſt be taken with ſuch horſes as are bred between two pillars, before they are backed.

Button-Wood. See Cephalanthus, Botany *Index*.

Button's-Bay, the name of the north part of Hudſon's bay, in North America, by which Sir Thomas Button attempted to find out a north-weſt paſſage to the Eaſt Indies. It lies between 80° and 100° weſt longitude, and between 60° and 66° north latitude.

Button-Stone, in *Natural Hiſtory*, a kind of figured ſtone, ſo denominated from its reſembling the button of a garment. Dr Hook gives the figure of three ſorts of button-ſtones, which ſeem to have been nothing elſe but the filling up of three ſeveral ſorts of ſhells. They are all of them very hard flints; and have this in common, that they conſiſt of two bodies, which ſeem to have been the filling up of two holes or vents in the ſhell. Dr Plot deſcribes a ſpecies finely ſtriated from the top, after the manner of ſome hair buttons. This name is alſo given to a peculiar ſpecies of ſlate found in the marquiſate of Bareith, in a mountain called *Fichtelberg*; which is extremely different from the common ſorts of ſlate, in that it runs with great eaſe into glaſs in five or ſix hours time, without the addition of any ſalt or other foreign ſubſtance, to promote its vitrification, as other ſtones require. It contains in itſelf all the principles of glaſs, and really has mixed in its ſubſtance the things neceſſary to be added to promote the fuſion of other ſtony bodies. The Swedes and Germans make buttons of the glaſs produced from it, which is very black and ſhining, and it has hence its name *button-ſtone*. They make ſeveral other things alſo of this glaſs, as the handles of knives and the like, and ſend a large quantity of it unwrought in round cakes, as it cools from the fuſion, into Holland.

Buttreſs || Buxton.

BUTTRESS, a kind of butment built archwiſe, or a maſs of ſtone or brick, ſerving to prop or ſupport the ſides of a building, wall, &c. on the outſide, where it is either very high, or has any conſiderable load to ſuſtain on the other ſide, as a bank of earth, &c.—Buttreſſes, are uſed againſt the angles of ſteeples and other buildings of ſtone, &c. on the outſide, and along the walls of ſuch buildings as have great and heavy roofs, which would be ſubject to thruſt the walls out, unleſs very thick, if no buttreſſes were placed againſt them. They are alſo placed for a ſupport and butment againſt the feet of ſome arches, that are turned acroſs great halls in old palaces, abbeys, &c.

BUTUS, in *Ancient Geography*, a town of Lower Egypt, on the weſt ſide of the branch of the Nile, called *Thermuthiacus*; towards the mouth called *Oſtium Sebennyticum*: in this town ſtood an oracle of Latona, (Strabo, Herodotus). Ptolemy places Butus in the Nomos Phthenotes; it is alſo called *Buto*, *-us*, (Herodotus, Stephanus). It had temples of Apollo and Diana, but the largeſt was that of Latona, where the oracle ſtood.

BUTZAW, a town of Lower Saxony, in Germany; it ſtands upon the river Varnow, on the road from Schwerin to Roſtock, lying in E. Long. 13. 12. N. Lat. 54. 50.

BUVETTE, or Beuvette, in the French laws, an eſtabliſhed place in every court, where the lawyers and counſellors may retire, warm themſelves, and take a glaſs of wine by way of refreſhment, at the king's charge. There is one for each court of parliament, but theſe are only for perſons belonging to that body; there are others in the *palais*, whither other perſons alſo reſort.

BUXENTUM, (Livy, Velleius, Ptolemy, Mela, Pliny); Pyxus, (Strabo, Pliny); a town of Lucania, firſt built by the people of Meſſana, but afterwards deſerted, (Strabo). A Roman colony was ſent thither, (Livy, Velleius): and when found ſtill thin of inhabitants, a new colony was ſent by a decree of the ſenate. Its name is from *buxus*, the box-tree, growing plentifully there. Strabo ſays, the name *Pyxus* includes a promontory, port, and river, under one. Now *Pulicaſtro*, in the Hither Principato of Naples. E. Long. 15. 40. N. Lat. 40. 20.

BUXTON, a place in the peak of Derbyſhire, celebrated for its medicinal waters, and lying in W. Long. 0. 20. N. Lat. 53. 20.

It has been always believed by our antiquaries, that the Romans were acquainted with theſe wells, and had frequented them much, as there is a military way ſtill viſible, called the *Bath-gate*, from Burgh to this place. This was verified about 50 years ago, when Sir Thomas Delves, of Cheſhire, in memory of a cure he received here, cauſed an arch to be erected; in digging the foundation for which, they came to the remains of a

Buxton. solid and magnificent ſtructure of Roman workmanſhip; and in other places of the neighbourhood, very capacious leaden veſſels, and other utenſils of Roman workmanſhip, have been diſcovered. Theſe waters have always been reckoned inferior to thoſe in Somerſetſhire; but ſeem never to have been totally diſuſed. They are mentioned by Leland, as well known 200 years ago; but it is certain they were brought into greater credit by Dr Jones in 1572, and by George earl of Shrewſbury, who erected a building over the bath, then compoſed of nine ſprings. This building was afterwards pulled down, and a more commodious one erected at the expence of the earl of Devonſhire. In doing this, however, the ancient regiſter of cures drawn up by the bath-warden, or phyſician attending the baths, and ſubſcribed by the hands of the patients, was loſt.

The warm waters of Buxton are, the bath, conſiſting of nine ſprings, as already mentioned, St Ann's well, and St Peter's or Bingham well. St Ann's well riſes at the diſtance of ſomewhat more than 32 yards north-eaſt from the bath. It is chiefly ſupplied from a ſpring on the north ſide, out of a rock of black limeſtone or baſtard marble. It formerly roſe into a ſtone baſon, ſhut up within an ancient Roman brick wall, a yard ſquare within, a yard high on three ſides, and open on the fourth. But, in 1709, Sir Thomas Delves, as already mentioned, erected an arch over it which ſtill continues. It is 12 feet long, and as many broad, ſet round with ſtone ſteps on the inſide. In the midſt of this dome the water now ſprings up into a ſtone baſon two feet ſquare. St Peter's or Bingham well riſes about 20 yards ſouth-eaſt of St Ann's. It is alſo called *Leigh's well*, from a memorable cure received from it by a gentleman of that name. It riſes out of a black limeſtone, in a very dry ground; and is not ſo warm as St Ann's well.

From the great reſort of company to the waters, this place has grown into a large ſtraggling town, which is daily increaſing. The houſes are chiefly, or rather ſolely, built for the reception of invalids; and many of them are not only commodious, but elegant. The duke of Devonſhire has lately erected a moſt magnificent building in the form of a creſcent, with piazzas, under which the company walk in wet or cold weather. It is divided into different hotels, ſhops, &c. with a public coffee-room, and a very elegant room for aſſemblies and concerts.

The hot water reſembles that of Briſtol. It has a ſweet and pleaſant taſte. It contains the calcareous earth, together with a ſmall quantity of ſea-ſalt, and an inconſiderable portion of a purging ſalt, but no iron can be diſcovered in it. This water taken inwardly is eſteemed good in the diabetes; in bloody urine; in the bilious cholic; in loſs of appetite, and coldneſs of the ſtomach; in inward bleedings; in atrophy; in contraction of the veſſels and limbs, eſpecially from age; in cramps and convulſions; in the dry aſthma without a fever; and alſo in barrenneſs. Inwardly and outwardly, it is ſaid to be good in rheumatic and ſcorbutic complaints; in the gout; in inflammation of the liver and kidneys, and in conſumptions of the lungs; alſo in old ſtrains; in hard callous tumours; in withered and contracted limbs; in the itch, ſcabs, nodes, chalky ſwellings, ring worms, and other ſimilar complaints.—Beſides the hot water, there is alſo a cold chalybeate water, with a rough irony taſte: It reſembles the Tunbridge water in virtues. Buxton.

For the methods of compoſing artificial Buxton water, or of impregnating the original water with a greater quantity of its own gas or with other gaſes, ſee WATERS, *Medicinal*.

BUXTON, *Jedediah*, a prodigy with reſpect to ſkill in numbers. His father, William Buxton, was ſchoolmaſter of the ſame pariſh where he was born in 1704: yet Jedediah's education was ſo much neglected, that he was never taught to write; and with reſpect to any other knowledge but that of numbers, ſeemed always as ignorant as a boy of ten years of age. How he came firſt to know the relative proportions of numbers, and their progreſſive denominations, he did not remember; but to this he applied the whole force of his mind, and upon this his attention was conſtantly fixed, ſo that he frequently took no cognizance of external objects, and when he did, it was only with reſpect to their numbers. If any ſpace of time was mentioned, he would ſoon after ſay it was ſo many minutes; and if any diſtance of way, he would aſſign the number of hair-breadths, without any queſtion being aſked, or any calculation expected by the company. When he once underſtood a queſtion, he began to work with amazing facility, after his own method, without the uſe of a pen, pencil, or chalk, or even underſtanding the common rules of arithmetic as taught in the ſchools. He would ſtride over a piece of land or a field, and tell you the contents of it almoſt as exact as if you had meaſured it by the chain. In this manner he meaſured the whole lordſhip of Elmton, of ſome thouſand acres, belonging to Sir John Rhodes, and brought him the contents, not only in acres, roods, and perches, but even in ſquare inches. After this, for his own amuſement, he reduced them into ſquare hair-breadths, computing 48 to each ſide of the inch. His memory was ſo great, that while reſolving a queſtion, he could leave off, and reſume the operation again where he left off the next morning, or at a week, a month, or at ſeveral months, and proceed regularly till it was completed. His memory would doubtleſs have been equally retentive with reſpect to other objects, if he had attended to other objects with equal diligence; but his perpetual application to figures prevented the ſmalleſt acquiſition of any other knowledge. He was ſometimes aſked, on his return from church, whether he remembered the text, or any part of the ſermon; but it never appeared that he brought away one ſentence, his mind, upon a cloſer examination, being found to have been buſied, even during divine ſervice, in his favourite operation, either dividing ſome time, or ſome ſpace, into the ſmalleſt known parts, or reſolving ſome queſtion that had been given him as a teſt of his abilities.

This extraordinary perſon living in laborious poverty, his life was uniform and obſcure. Time, with reſpect to him, changed nothing but his age; nor did the ſeaſons vary his employment, except that in winter he uſed a flail, and in ſummer a ling-hook. In the year 1754, he came to London, where he was introduced to the royal ſociety, who, in order to prove his abilities, aſked him ſeveral queſtions in arithmetic, and he gave them ſuch ſatisfaction, that they diſmiſſed him with a handſome gratuity. In this viſit to the metropolis,

Buxtorf || Buying.

polis, the only object of his curiosity, except figures, was his desire to see the king and royal family; but they being just removed to Kensington, Jedediah was disappointed. During his residence in London, he was taken to see King Richard III. performed at Drury-lane playhouse; and it was expected, either that the novelty and the splendour of the show would have fixed him in astonishment, or kept his imagination in a continual hurry; or that his passions would, in some degree, have been touched by the power of action, if he had not perfectly understood the dialogue. But Jedediah's mind was employed in the playhouse just as it was employed in every other place. During the dance, he fixed his attention upon the number of steps; he declared, after a fine piece of music, that the innumerable sounds produced by the instruments had perplexed him beyond measure; and he attended even to Mr Garrick, only to count the words that he uttered, in which he said he perfectly succeeded. Jedediah returned to the place of his birth, where, if his enjoyments were few, his wishes did not seem to be more. He applied to his labour, by which he subsisted, with cheerfulness; he regretted nothing that he left behind him in London; and it continued to be his opinion, that a slice of rusty bacon afforded the most delicious repast.

BUXTORF, John, a learned professor of Hebrew at Basil, who, in the 17th century, acquired the highest reputation, for his knowledge of the Hebrew and Chaldee languages. He died of the plague at Basil in 1629, aged 65. His principal works are, 1. A small but excellent Hebrew grammar; the best edition of which is that of Leyden in 1701, revised by Leusden, 2. A treasure of the Hebrew grammar. 3. A Hebrew concordance, and several Hebrew lexicons. 4. *Institutio epistolaris Hebraica.* 5. *De abbreviaturis Hebræorum, &c.*

Buxtorf, *John*, the son of the former, and a learned professor of the oriental languages at Basil, distinguished himself, like his father, by his knowledge of the Hebrew language, and his rabbinical learning. He died at Basil in 1664, aged 65 years. His principal works are, 1. His translation of the *More Nevochim*, and the *Cozri*. 2. A Chaldee and Syriac lexicon. 3. An anticritic against Cappel. 4. A treatise on the Hebrew points and accents against the same Cappel.

BUXUS, the box-tree. See Botany *Index*.

BUYING, the act of making a purchase, or of acquiring the property of a thing for a certain price.

Buying stands opposed to selling, and differs from borrowing or hiring, as in the former the property of the thing is alienated for perpetuity, which in the latter it is not. By the civil law, persons are allowed to buy hope, *spem precio emere*, that is, to purchase the event or expectation of any thing; *e. gr.* the fish or birds a person shall catch, or the money he shall win in gaming.

There are different species of buying in use among traders: as, buying on one's own account, opposed to buying on commission; buying for ready money, which is when the purchaser pays in actual specie on the spot; buying on credit, or for a time certain, is when the payment is not to be presently made, but in lieu thereof, an obligation given by the buyer for payment at a time future; buying on delivery, is when the goods purchased are only to be delivered at a certain time future.

Buying || Byng.

Buying the Refusal, is giving money for the right or liberty of purchasing a thing at a fixed price in a certain time to come; chiefly used in dealing for shares in stock. This is sometimes also called by a cant name, *buying the bear*.

Buying the Small-Pox, is an appellation given to a method of procuring that disease by an operation similar to inoculation; frequent in South Wales, where it has obtained time out of mind, It is performed either by rubbing some of the *pus* taken out of a pustule of a variolous person on the skin, or by making a puncture in the skin with a pin dipped in such pus.

BUYS, a town of Dauphiny in France, situated on the borders of Provence. E. Long. 5. 20. N. Lat. 44. 25.

BUZANCOIS, a small town of Berry in France, situated on the borders of Touraine, in E. Long. 1. 29. N. Lat. 46. 38.

BUZBACH, a town of Germany, in Westeravia, and the county of Holmes, on the confines of Hanau. E. Long. 10. 51. N. Lat. 50. 22.

BUZET, a small town of France, in Languedoc, seated on the river Torne, in E. Long. 1. 45. N. Lat. 43. 47.

BUZZARD, the name of several species of the hawk kind. See Falco, Ornithology *Index*.

BYBLUS, in *Ancient Geography*, a town of Phœnicia, situated between Berytus and Botrys; it was the royal residence of Cinyras; sacred to Adonis. Pompey delivered it from a tyrant, whom he caused to be beheaded. It stood at no great distance from the sea, on an eminence (Strabo): near it ran the Adonis into the Mediterranean. Now in ruins.

BYCHOW, a small town of Lithuania in Poland, situated on the river Nieper, in E. Long. 30. 2. N. Lat. 53. 57.

BY-laws, are laws made *obiter*, or by the by; such as orders and constitutions of corporations for the governing of their members, of court-leets, and courts baron, commoners, or inhabitants in vills, &c. made by common assent, for the good of those that made them, in particular cases whereunto the public law doth not extend; so that they bind farther than the common or statute law: guilds and fraternities of trades by letters patent of incorporation, may likewise make by-laws for the better regulation of trade among themselves or with others. In Scotland these laws are called laws of *birlaw* or *burlaw*; which are made by neighbours elected by common consent in the *birlaw-courts*, wherein knowledge is taken of complaints betwixt neighbour and neighbour; which men so chosen are judges and arbitrators, and styled *birlaw-men*. And birlaws, according to Skene, are *leges rusticorum*, laws made by husbandmen, or townships, concerning neighbourhood among them. All by-laws are to be reasonable, and for the common benefit, not private advantage of particular persons, and must be agreeable to the public laws in being.

BYNG, George, Lord Viscount Torrington, was the son of John Byng, Esq. and was born in 1663. At the age of 15, he went volunteer to sea with the king's warrant. His early engagement in this course of life gave him little opportunity of acquiring learning

Byng. ing or cultivating the polite arts; but by his abilities and activity as a naval commander he furniſhed abundant matter for the pens of others. After being ſeveral times advanced, he was in 1702 raiſed to the command of the Naſſau, a third rate, and was at the taking and burning the French fleet at Vigo; and the next year he was made rear-admiral of the red. In 1704, he ſerved in the grand fleet ſent to the Mediterranean under Sir Cloudeſly Shovel, as rear-admiral of the red; and it was he who commanded the ſquadron that attacked, cannonaded, and reduced Gibraltar. He was in the battle of Malaga, which followed ſoon after; and for his behaviour in that action Queen Anne conferred on him the honour of knighthood. In 1705, in about two months time, he took 12 of the enemies largeſt privateers, with the Thetis, a French man of war of 44 guns; and alſo ſeveral merchant ſhips, moſt of them richly laden. The number of men taken on board was 2070, and of guns 334. In 1718 he was made admiral and commander in chief of the fleet; and was ſent with a ſquadron into the Mediterranean for the protection of Italy, according to the obligation England was under by treaty, againſt the invaſion of the Spaniards; who had the year before ſurpriſed Sardinia, and had this year landed an army in Sicily. In this expedition he deſpatched Captain Walton in the Canterbury with five more ſhips, in purſuit of ſix Spaniſh men of war, with galleys, fire-ſhips, bomb-veſſels, and ſtoreſhips, who ſeparated from the main fleet, and ſtood in for the Sicilian ſhore. The captain's laconic epiſtle on this occaſion is worthy of notice; which ſhowed that fighting was his talent as well as his admiral's, and not writing.

"Sir,

"We have taken and deſtroyed all the Spaniſh ſhips and veſſels which were upon the coaſt, as per margin.

Canterbury, off Syracuſe, I am, &c.
Auguſt 16. 1718. G. Walton."

From the account referred to, it appeared that he had taken four Spaniſh men of war, with a bomb-veſſel and a ſhip laden with arms; and burned four, with a fire-ſhip and bomb-veſſel. The king made the admiral a handſome preſent, and ſent him plenipotentiary powers to negotiate with the princes and ſtates of Italy as there ſhould be occaſion. He procured the emperor's troops free acceſs into the fortreſſes that ſtill held out in Sicily; ſailed afterwards to Malta, and brought out the Sicilian galleys, and a ſhip belonging to the Turkey company. Soon after he received a gracious letter from the emperor Charles VI. written with his own hand, accompanied with a picture of his imperial majeſty, ſet round with very large diamonds, as a mark of the grateful ſenſe he had of his ſervices. It was entirely owing to his advice and aſſiſtance that the Germans retook the city of Meſſina in 1719, and deſtroyed the ſhips that lay in the baſon; which completed the ruin of the naval power of Spain. The Spaniards being much diſtreſſed, offered to quit Sicily; but the admiral declared, that the troops ſhould never be ſuffered to quit the iſland till the king of Spain had acceded to the quadruple alliance. And to his conduct it was entirely owing that Sicily was ſubdued, and his Catholic majeſty forced to accept the terms preſcribed him by the quadruple alliance. After performing ſo many ſignal ſervices, the king received him with the moſt gracious expreſſions of favour and ſatisfaction; made him rear-admiral of England and treaſurer of the navy, one of his moſt honourable privy-council, Baron Byng of Southill in the county of Bedford, Viſcount Torrington in Devonſhire, and one of the knights companions of the Bath upon the revival of that order. In 1727, George II. on his acceſſion to the crown, placed him at the head of his naval affairs, as firſt lord commiſſioner of the admiralty; in which high ſtation he died January 15. 1733, in the 70th year of his age, and was buried at Southill in Bedfordſhire. Byng || Byſſus.

Byng, *the honourable George*, Eſq. the unhappy ſon of the former, was bred to ſea, and roſe to the rank of admiral of the blue. He gave many proofs of courage; but was at laſt ſhot, upon a dubious ſentence for neglect of duty, in 1757. See Britain.

BYRLAW or *Burlaw Laws* in Scotland. See By-laws.

BYROM, John, an ingenious poet of Mancheſter, born in 1691. His firſt poetical eſſay appeared in the Spectator, N° 603, beginning, "My time, O ye Muſes, was happily ſpent;" which, with two humorous letters on dreams, are to be found in the eighth volume. He was admitted a member of the Royal Society in 1724; and having originally entertained thoughts of practiſing phyſic, to which the title of *doctor* is incident, that was the appellation by which he was always known: but reducing himſelf to narrow circumſtances by a precipitate marriage, he ſupported himſelf by teaching a new method of writing ſhorthand, of his own invention; until an eſtate devolved to him by the death of an elder brother. He was a man of lively wit; of which, whenever a favourable opportunity tempted him to indulge it, he gave many humorous ſpecimens. He died in 1763; and a collection of his miſcellaneous poems was printed at Mancheſter, in 2 vols 8vo, 1773.

BYRRHUS. See Entomology *Index*.

BYSSUS. See Botany *Index*.

Byssus, or *Byſſum*, a fine thready matter produced in India, Egypt, and about Elis in Achaia, of which the richeſt apparel was anciently made, eſpecially that worn by the prieſts both Jewiſh and Egyptian. Some interpreters render the Greek Βυσσος, which occurs both in the Old and New Teſtament, by *fine linen*. But other verſions, as Calvin's, and the Spaniſh printed at Venice in 1556, explain the word by *ſilk*; and yet byſſus muſt have been different from our ſilk, as appears from a multitude of ancient writers, and particularly from Jul. Pollux. M. Simon, who renders the word by fine linen, adds a note to explain it; viz. that there was a fine kind of linen very dear, which the great lords alone wore in this country as well as in Egypt." This account agrees perfectly well with that given by Heſychius, as well as what is obſerved by Bochart, that the byſſus was a finer kind of linen, which was frequently dyed of a purple colour. Some authors will have the byſſus to be the ſame with our cotton; others take it for the *linum aſbeſtinum*; and others for the lock or bunch of ſilky hair found adhering to the pinna marina, by which it faſtens itſelf to the neighbouring bodies. Authors uſually diſtinguiſh two ſorts of byſſus; that of Elis; and that of Judæa, which

Byſſus, Byzantium.

which was the fineſt. Of this latter were the prieſtly ornaments made. Bonfrerius notes, that there muſt have been two ſorts of byſſus, one finer than ordinary, by reaſon there are two Hebrew words uſed in Scripture to denote byſſus; one of which is always uſed in ſpeaking of the habit of the prieſts, and the other of that of the Levites.

Brssvs Aſbeſtinus, a ſpecies of aſbeſtus or incombuſtible flax, compoſed of fine flexible fibres parallel to one another. It is found plentifully in Sweden, either white or of different ſhades of green. At a copper mine in Weſtmannland it forms the greateſt part of the vein out of which the ore is dug; and by the heat of the furnace which melts the metal, is changed into a pure ſemitranſparent ſlag or glaſs.

BYZANTIUM, an ancient city of Thrace, ſituated on the Boſphorus. It was founded, according to Euſebius, about the 30th Olympiad, while Tullus Hoſtilius reigned in Rome. But, according to Diodorus Siculus, the foundations of this metropolis were laid in the time of the Argonauts, by one Byſas, who then reigned in the neighbouring country, and from whom the city was called *Byzantium*. This Byſas, according to Euſtathius, arrived in Thrace a little before the Argonauts came into thoſe ſeas, and ſettled there with a colony of Megarenſes. Velleius Paterculus aſcribes the founding of Byzantium to the Mileſians, and Ammianus Marcellinus to the inhabitants of Attica. Some ancient medals of Byzantium, which have reached our times, bear the name and head of Byſas, with the prow of a ſhip on the reverſe. The year after the deſtruction of Jeruſalem by Titus, Byzantium was reduced to the form of a Roman province. In the year 193 this city took part with Niger againſt Severus. It was ſtrongly garriſoned by Niger, as being a place of the utmoſt importance. It was ſoon after inveſted by Severus; and as he was univerſally hated on account of his cruelty, the inhabitants defended themſelves with the greateſt reſolution. They had been ſupplied with a great number of warlike machines, moſt of them invented and built by Periſcus a native of Nicæa, and the greateſt engineer of his age. For a long time they baffled all the attempts of the aſſailants, killed great numbers of them, cruſhed ſuch as approached the walls with large ſtones; and when ſtones began to fail, they uſed the ſtatues of their gods and heroes. At laſt they were obliged to ſubmit, through famine, after having been reduced to the neceſſity of devouring one another. The conqueror put all the magiſtrates and ſoldiers to the ſword; but ſpared the engineer Periſcus. Before this ſiege, Byzantium was the greateſt, moſt populous, and wealthieſt city of Thrace. It was ſurrounded by walls of an extraordinary height and breadth: and defended by a great number of towers, ſeven of which were built with ſuch art, that the leaſt noiſe heard in one of them was immediately conveyed to all the reſt. Severus, however, no ſooner became maſter of it, than he commanded it to be laid in aſhes. The inhabitants were ſtripped of all their effects, publicly ſold for ſlaves and the walls levelled with the ground. But by the chronicle of Alexandria we are informed, that ſoon after this terrible cataſtrophe, Severus himſelf cauſed a great part of the city to be rebuilt, calling it *Antonia* from his ſon Caracalla, who aſſumed the ſurname of *Antoninus*. In 262, the tyrant Galienus wreaked his fury on the inhabitants of Byzantium. He intended to beſiege it; but on his arrival deſpaired of being able to make himſelf maſter of ſuch a ſtrong place. He was admitted the next day, however, into the city; and without any regard to the terms he had agreed to, cauſed the ſoldiers and all the inhabitants to be put to the ſword. Trebellius Pollio ſays, that not a ſingle perſon was left alive. What the reaſon was for ſuch an extraordinary maſſacre, we are nowhere informed. In the wars between the emperors Licinius and Maximin the city of Byzantium was obliged to ſubmit to the latter, but was ſoon after recovered by Licinius. In the year 323, it was taken from Licinius by Conſtantine the Great, who in 330 enlarged and beautified it, with a deſign to make it the ſecond, if not the firſt, city in the Roman empire. He began with extending the walls of the ancient city from ſea to ſea; and while ſome of the workmen were buſied in rearing them, others were employed in raiſing within them a great number of ſtately buildings, and among others a palace no way inferior in magnificence and extent to that of Rome. He built a capitol and amphitheatre, made a circus maximus, ſeveral forums, porticoes, and public baths. He divided the whole city into 14 regions, and granted the inhabitants many privileges and immunities. By this means Byzantium became one of the moſt flouriſhing and populous cities of the empire. Vaſt numbers of people flocked thither from Pontus, Thrace, and Aſia, Conſtantine having, by a law, enacted this year (330), decreed, that ſuch as had lands in thoſe countries ſhould not be at liberty to diſpoſe of them, nor even leave them to their proper heirs at their death, unleſs they had a houſe in this new city. But however deſirous the emperor was that his city ſhould be filled with people, he did not care that it ſhould be inhabited by any but Chriſtians. He therefore cauſed all the idols to be pulled down, and all their churches conſecrated to the true God. He built beſides an incredible number of churches, and cauſed croſſes to be erected in all the ſquares and public places. Moſt of the buildings being finiſhed, it was ſolemnly dedicated to the Virgin Mary, according to Cedrenus, but, according to Euſebius, to the God of Martyrs. At the ſame time Byzantium was equalled to Rome. The ſame rights, immunities, and privileges, were granted to its inhabitants as to thoſe of the metropolis. He eſtabliſhed a ſenate and other magiſtrates, with a power and authority equal to thoſe of old Rome. He took up his reſidence in the new city; and changed its name to Constantinople.

Byzantium. Bzovius.

BZOVIUS, Abraham, one of the moſt celebrated writers in the 17th century, with reſpect to the aſtoniſhing number of pieces compoſed by him. His chief work is the continuation of Baronius's annals. He was a native of Poland, and a Dominican friar. Upon his coming to Rome, he was received with open arms by the Pope, and had an apartment aſſigned him in the Vatican. He merited that reception, for he has imitated Baronius to admiration in his deſign of making all things conſpire to the deſpotic power and glory of the papal ſee. He died in 1630, aged 70.

C.

C, Caaba.

C THE third letter, and ſecond conſonant, of the alphabet, is pronounced like *k* before the vowels *a*, *o*, and *u*; and like *s* before *e*, *i*, and *y*. C is formed, according to Scaliger, from the ϰ of the Greeks, by retrenching the ſtem or upright line; though others derive it from the ג of the Hebrews, which has in effect the ſame form; allowing only for this, that the Hebrews reading backwards, and the Latins, &c. forwards, each have turned the letter their own way. However the C not being the ſame as to ſound with the Hebrew *caph*, and it being certain the Romans did not borrow their letters immediately from the Hebrews or other orientals, but from the Greeks, the derivation from the Greek ϰ, is the more probable. Add, that F. Montfaucon, in his Palæographia, gives us ſome forms of the Greek ϰ which come very near to that of our C: thus, for inſtance, ⊂: and Suidas calls the C the Roman kappa. The ſecond ſound of C reſembles that of the Greek Σ; and many inſtances occur of ancient inſcriptions, in which Σ has the ſame form with our C. All grammarians agree, that the Romans pronounced their Q like our C, and their C like our K. F. Mabillon adds, that Charles the Great was the firſt who wrote his name with a C; whereas all his predeceſſors of the ſame name wrote it with a K; and the ſame difference is obſerved in their coins.

As an abbreviature, C ſtands for Caius, Carolus, Cæſar, *condemno*, &c. and CC for *conſulibus*.

As a numeral, C ſignifies 100, CC 200, &c.

C, in *Muſic*, placed after the cleff, intimates that the muſic is in common time, which is either quick or ſlow, as it is joined with allegro, or adagio: if alone, it is uſually adagio. If the C be croſſed or turned, the firſt requires the air to be played quick, and the laſt very quick.

CAABA, or Caabah, properly ſignifies a ſquare ſtone building: but is particularly applied by the Mahometans to the temple at Mecca, built as they pretend, by Abraham and Iſhmael his ſon.

Before the time of Mahomet, this temple was a place of worſhip for the idolatrous Arabs, and is ſaid to have contained no leſs than 360 different images, equalling in number the days of the Arabian year. They were all deſtroyed by Mahomet, who ſanctified the Caaba, and appointed it to be the chief place of worſhip for all true believers. The temple is in length from north to ſouth about 24 cubits; its breadth from eaſt to weſt is 23, and its height 27. The door, which is on the eaſt ſide, ſtands about four cubits from the ground; the floor being level with the bottom of the door. In the corner next this door is the *black ſtone*, ſo much celebrated among the Mahometans. On the north ſide of the Caaba, within a ſemicircular encloſure 50 cubits long, lies the *white ſtone*, ſaid to be the ſepulchre of Iſhmael, which receives the rain water from the Caaba by a ſpout formerly of wood, but now of gold. The black ſtone, according to the Mahometans, was brought down from heaven by Gabriel at the creation of the world, and was originally of a white colour; but contracted the blackneſs that now appears on it from the guilt of thoſe ſins committed by the ſons of men. It is ſet in ſilver, and fixed in the ſouth-eaſt corner of the Caaba, looking towards Baſra, about ſeven ſpans from the ground. This ſtone, upon which there is the figure of a human head, is held in the higheſt eſtimation among the Arabs; all the pilgrims kiſſing it with great devotion, and ſome even calling it the *right hand of God*. Its blackneſs, which is only ſuperficial, is probably owing to the kiſſes and touches of ſo many people. After the Karmatians had taken Mecca, they carried away this precious ſtone, and could by no means be prevailed upon to reſtore it; but finding at laſt that they were unable to prevent the concourſe of pilgrims to Mecca, they ſent it back of their own accord, after having kept it 22 years. Caaba.

The double roof of the Caaba is ſupported within by three octagonal pillars of aloes wood; between which, on a bar of iron, hang ſome ſilver lamps. The outſide is covered with rich black damaſk, adorned with an embroidered band of gold, which is changed every year, and was formerly ſent by the caliphs, afterwards by the ſultans of Egypt, and is now provided by the Turkiſh emperors. The Caaba, at ſome diſtance, is almoſt ſurrounded by a circular encloſure of pillars, joined towards the bottom by a low balluſtrade, and towards the top by bars of ſilver. Juſt without this inner encloſure, on the ſouth, north, and weſt ſides of the Caaba, are three buildings, which are the oratories or places where three of the orthodox ſects aſſemble to perform their devotions. Towards the ſouth-eaſt ſtands an edifice which covers the well Zemzem, the treaſury, and the cupola of Al Abbas. Formerly there was another cupola, that went under the name of the *hemicycle* or *cupola of Judea*; but whether or not any remains of that are now to be ſeen is unknown; nor is it eaſy to obtain information in this reſpect, all Chriſtians being denied acceſs to this holy place. At a ſmall diſtance from the Caaba, on the eaſt ſide, is the *ſtation* or *place* of Abraham; where is another ſtone much reſpected by the Mahometans; and where they pretend to ſhow the footſteps of the patriarch, telling us he ſtood on it when he built the Caaba. Here the fourth ſect of Arabs, viz. that of Al Shafei, aſſemble for religious purpoſes.

The ſquare colonnade, or great piazza, which at a conſiderable diſtance encloſes theſe buildings, conſiſts, according to Al Jannabi, of 488 pillars, and has no leſs than 38 gates. Mr Sale compares this piazza to that of the Royal Exchange at London, but allows it to be much larger. It is covered with ſmall domes or cupolas, from the four corners of which riſe as many minarets or ſteeples, with double galleries, and adorned with gilded ſpires and creſcents after the Turkiſh manner, as are alſo the cupolas which cover the piazza and other buildings. Between the columns of both encloſures hang a great number of lamps, which are conſtantly

Caamini || Caballaria.

conſtantly lighted at night. The firſt foundation of this ſecond encloſure was laid by Omar the ſecond caliph, who built no more than a low wall, to prevent the court of the Caaba from being encroached upon by private buildings; but by the liberality of ſucceeding princes, the whole has been raiſed to that ſtate of magnificence in which it appears at preſent.

This temple enjoys the privilege of an aſylum for all ſorts of criminals: but it is moſt remarkable for the pilgrimages made to it by the devout Muſſulmans, who pay ſo great a veneration to it, that they believe a ſingle ſight of its ſacred walls, without any particular act of devotion, is as meritorious in the ſight of God, as the moſt careful diſcharge of one's duty, for the ſpace of a whole year, in any other temple.

CAAMINI, in *Botany*, a name given by the Spaniards and others to the fineſt ſort of Paraguayan tea. It is the leaf of a ſhrub which grows on the mountains of Maracaya, and is uſed in Chili and Peru as the tea is with us. The mountains where this ſhrub grows naturally are far from the inhabited parts of Paraguay: but the people of the place know ſo well the value and uſe of it, that they conſtantly furniſh themſelves with great quantities of it from the ſpot. They uſed to go out on theſe expeditions many thouſands together; leaving their country, in the mean time expoſed to the inſults of their enemies, and many of themſelves periſhing by fatigue. To avoid theſe inconveniences, they have of late planted theſe trees about their habitations; but the leaves of theſe cultivated ones have not the fine flavour of thoſe that grow wild. The king of Spain has permitted the Indians of Paraguay to bring to the town of Saintfoy 12,000 arobes of the leaves of this tree every year, but they are not able to procure ſo much of the wild leaves annually: about half the quantity is the utmoſt they bring of this: the other half is made up of the leaves of the trees in their own plantations; and this ſells at a lower price, and is called *pabos*. The arobe is about 25 pound weight; the general price is four piaſtres; and the money is always divided equally among the people of the colony.

CAANA, or Kaana, a town in Upper Egypt, ſeated on the eaſtern bank of the river Nile, from whence they carry corn and pulſe for the ſupply of Mecca in Arabia. E. Long. 32. 23. N. Lat. 24. 30. Here are ſeveral monuments of antiquity yet remaining, adorned with hieroglyphics.

CAB, a Hebrew dry meaſure, being the ſixth part of a ſeah or ſatum, and the 18th part of an ephah. A cab contained $2\frac{5}{6}$ pints of our corn-meaſure: a quarter cab was the meaſure of dove's dung, or more properly a ſort of chick-peaſe called by this name, which was ſold at Samaria, during the ſiege of that city, for five ſhekels.

CABAL, an apt name currently given to the infamous miniſtry of Charles II. compoſed of five perſons, Clifford, Aſhley, Buckingham, Arlington, and Lauderdale; the firſt letters of whoſe names, in this order, furniſhed the appellation by which they were diſtinguiſhed.

CABALIST, in French commerce, a factor or perſon who is concerned in managing the trade of another.

CABALLARIA, in middle-age writers, lands held by the tenure of furniſhing a horſeman, with ſuitable equipage in time of war, or when the lord had occaſion for him.

Caballeros || Cabbala.

CABALLEROS, or Cavalleros, are Spaniſh wools, of which there is a pretty conſiderable trade at Bayonne in France.

CABALLINE, denotes ſomething belonging to horſes; thus caballine aloes is ſo called, from its being chiefly uſed for purging horſes; and common brimſtone is called *ſulphur caballinum* for a like reaſon.

CABALLINUM in *Ancient Geography*, a town of the Ædui in Gallia Celtica; now *Chalons ſur Saone*, which ſee.

CABALLINUS in *Ancient Geography*, a very clear fountain of Mount Helicon in Bœotia; called *Hippocrene* by the Greeks, becauſe opened by Pegaſus on ſtriking the rock with his hoof, and hence called *Pegaſius*.

CABALLIO, or Cabellio, in *Ancient Geography*, a town of the Cavares in Gallia Narbonenſis, ſituated on the Druentia. One of the Latin colonies, in the Notitiæ called *Civitas Cabellicorum*. Now *Cavaillon* in Provence.

CABBAGE, in *Botany*. See Brassica; and Agriculture *Index*.

Cabbage-Tree or *True Cabbage-Palm*. See Areca, Botany *Index*.

Cabbage-bark *Tree*. See Geoffræa, Botany *Index*.

CABBALA, according to the Hebrew ſtyle, has a very diſtinct ſignification from that wherein we underſtand it in our language. The Hebrew cabbala ſignifies tradition; and the rabbins, who are called *cabbaliſts*, ſtudy principally the combination of particular words, letters, and numbers, and by this means pretend to diſcover what is to come, and to ſee clearly into the ſenſe of many difficult paſſages of Scripture. There are no ſure principles of this knowledge, but it depends upon ſome particular traditions of the ancients; for which reaſon it is termed *cabbala*.

The cabbaliſts have abundance of names which they call *ſacred*; theſe they make uſe of in invoking of ſpirits, and imagine they receive great light from them. They tell us, that the ſecrets of the Cabbala were diſcovered to Moſes on Mount Sinai; and that theſe have been delivered to them down from father to ſon, without interruption, and without any uſe of letters; for to write them down, is what they are by no means permitted to do. This is likewiſe termed the *oral law*, becauſe it paſſed from father to ſon, in order to diſtinguiſh it from the written laws.

There is another cabbala, called *artificial*, which conſiſts in ſearching for abſtruſe and myſterious ſignifications of a word in Scripture, from whence they borrow certain explanations, by combining the letters which compoſe it; this cabbala is divided into three kinds, the gematric, the notaricon, and the temura or themura. The firſt whereof conſiſts in taking the letters of a Hebrew word for ciphers or arithmetical numbers, and explaining every word by the arithmetical value of the letters whereof it is compoſed. The ſecond ſort of cabbala, called *notaricon*, conſiſts in taking every particular letter of a word for an entire diction; and the third, called *themura*, i. e. change, conſiſts in making different tranſpoſitions or changes of

Cabbaliſts || Cabidos.

of letters, placing one for the other, or one before the other.

Among the Chriſtians, likewiſe, a certain ſort of magic is, by miſtake, called *cabbala;* which conſiſts in uſing improperly certain paſſages of Scripture for magic operations, or in forming magic characters or figures with ſtars and taliſmans.

Some viſionaries among the Jews believe, that Jeſus Chriſt wrought his miracles by virtue of the myſteries of the cabbala.

CABBALISTS, the Jewiſh doctors who profeſs the ſtudy of the cabbala.

In the opinion of theſe men, there is not a word, letter, or accent in the law, without ſome myſtery in it. The Jews are divided into two general ſects; the karaites, who refuſe to receive either tradition or the talmud, or any thing but the pure texts of Scripture; and the rabbiniſts, or talmudiſts, who, beſides this, receive the traditions of the ancients, and follow the talmud.

The latter are again divided into two other ſects; pure rabbiniſts, who explain the Scripture in its natural ſenſe, by grammar, hiſtory, and tradition; and cabbaliſts, who, to diſcover hidden myſtical ſenſes, which they ſuppoſe God to have couched therein, make uſe of the cabbala, and the myſtical methods above mentioned.

CABECA, or Cabess, a name given to the fineſt ſilks in the Eaſt Indies, as thoſe from 15 to 20 per. cent, inferior to them are called *barina*. The Indian workmen endeavour to paſs them off one with the other; for which reaſon, the more experienced European merchants take care to open the bales, and to examine all the ſkaines one after another. The Dutch diſtinguiſh two ſorts of cabecas; namely, the moor cabeca, and the common cabeca. The former is ſold at Amſterdam for about 21½ ſchellinghen Flemiſh, and the other for about 18½.

Cabeca *de Vide*, a ſmall ſea port town of Alentejo, in Portugal, with good walls, and a ſtrong caſtle. W. Long. 6. 43, N. Lat. 39. 0.

CABENDA, a ſea port of Congo, in Africa, ſituated in E. Long. 12. 2. S. Lat. 4. 5.

CABES, or Gabes, a town of Africa in the kingdom of Tunis, ſeated on a river near the gulf of the ſame name. E. Long. 10. 35. N. Lat. 33. 40.

CABEZZO, a province of the kingdom of Angola, in Africa; having Oacco on the north, Lubolo on the ſouth, the Coanzo on the north-eaſt, and the Reinba on the ſouth-weſt. It is populous, and well ſtored with cattle, &c. and hath a mine of iron on a mountain from thence called the *iron mountain*, which yields great quantities of that metal; and this the Portugueſe have taught the natives to manufacture. This province is watered by a river called *Rio Longo*, and other ſmall rivulets, lakes, &c. The trees here are vaſtly large; and they have one ſort not unlike our apple trees, the bark of which being ſlaſhed with a knife, yields an odoriferous reſin of the colour and conſiſtency of wax, and very medicinal in its nature, only a little too hot for Europeans, unleſs qualified by ſome cooling drug.

CABIDOS, or Cavidos, a long meaſure uſed at Goa, and other places of the Eaſt Indies belonging to the Portugueſe, to meaſure ſtuffs, linens, &c. and equal to ⅘ths of the Paris ell.

Cabin || Cabinet.

CABIN, a room or apartment in a ſhip where any of the officers uſually reſide. There are many of theſe in a large ſhip; the principal of which is deſigned for the captain or commander. In ſhips of the line this chamber is furniſhed with an open gallery in the ſhip's ſtern, as alſo a little gallery on each quarter. The apartments where the inferior officers or common ſailors ſleep and meſs are uſually called Births; which ſee.

The bed places built up for the ſailors at the ſhip's ſide in merchantmen are alſo called *cabins*.

CABINDA, the chief port of the kingdom of Angoy in Loango in Africa. It is ſituated at the mouth of a river of the ſame name about five leagues north of Cape Palmerino, on the north ſide of the mouth of the river Zaire. The bay is very commodious for trade, wooding, and watering.

CABINET, the moſt retired place in the fineſt part of a building, ſet apart for writing, ſtudying, or preſerving any thing that is precious.

A complete apartment conſiſts of a hall, antichamber, chamber, and cabinet, with a gallery on one ſide. Hence we ſay, a cabinet of paintings, curioſities, &c.

Cabinet, alſo denotes a piece of joiners workmanſhip, being a kind of preſs or cheſt, with ſeveral doors and drawers.

There are common cabinets of oak or of cheſnut varniſhed, cabinets of China and Japan, cabinets of inlaid-work, and ſome of ebony, or the like ſcarce and precious woods. Formerly the Dutch and German cabinets were much eſteemed in France; but are now quite out of date, as well as the cabinets of ebony which came from Venice.

Cabinet is alſo uſed in ſpeaking of the more ſelect and ſecret councils of a prince or adminiſtration. Thus we ſay, the ſecrets, the intrigues of the cabinet. To avoid the inconveniences of a numerous council, the policy of Italy and practice of France firſt introduced cabinet councils. King Charles I. is charged with firſt eſtabliſhing this uſage in England. Beſides his privy council, that prince erected a kind of cabinet council, or junto, under the denomination of a council of ſtate; compoſed of Archbiſhop Laud, the earl of Strafford, and Lord Collington, with the ſecretaries of ſtate. Yet ſome pretend to find the ſubſtance of a cabinet council of much greater antiquity, and even allowed by parliament, which anciently ſettled a quorum of perſons moſt confided in, without whoſe preſence no arduous matter was to be determined; giving them power to act without conſulting the reſt of the council. As long ſince as the 28th of Henry III. a charter paſſed in affirmance of the ancient rights of the kingdom; which provided, that four great men, choſen by common conſent, who were to be converſators of the kingdom, among other things, ſhould ſee to the diſpoſing of moneys given by parliament, and appropriated to particular uſes; and parliaments were to be ſummoned as they ſhould adviſe. But even of theſe four, any two made a quorum: and generally the chief juſtice of England and chancellor were of the number of the conſervators. Matth. Par. 28. Henry III. In the firſt

of

Cabiri || Cable.

of Henry VI. the parliament provides, that the quorum for the privy council be ſix, or four at leaſt; and that in all weighty conſiderations, the dukes of Bedford and Gloceſter, the king's uncles, ſhould be preſent; which ſeems to be erecting a cabinet by law.

CABIRI, a term in the theology of the ancient Pagans, ſignifying great and powerful gods; being a name given to the gods of Samothracia. They were alſo worſhipped in other parts of Greece, as Lemnos and Thebes, where the cabiria were celebrated in honour of them; theſe gods are ſaid to be in number four, viz. Axieros, Axiocerſa, Axiocerſus, and Caſmilus.

CABIRIA, feſtivals in honour of the Cabiri, celebrated in Thebes and Lemnos, but eſpecially in Samothracia, an iſland conſecrated to the Cabiri. All who were initiated into the myſteries of theſe gods were thought to be ſecured thereby from ſtorms at ſea, and all other dangers. The ceremony of initiation was performed by placing the candidate, crowned with olive branches, and girded about the loins with a purple ribband, on a kind of throne, about which the prieſts and perſons before initiated danced.

CABLE, a thick, large, ſtrong rope, commonly of hemp, which ſerves to keep a ſhip at anchor.

There is no merchant ſhip, however weak, but has at leaſt three cables; namely, the chief cable, or cable of the ſheet anchor, a common cable, and a ſmaller one.

Cable is alſo ſaid of ropes, which ſerve to raiſe heavy loads, by the help of cranes, pulleys, and other engines. The name of *cable* is uſually given to ſuch as are, at leaſt, three inches in circumference; thoſe that are leſs are only called *ropes*, of different names, according to their uſe.

Every cable, of whatſoever thickneſs it be, is compoſed of three ſtrands; every ſtrand of three ropes; and every rope of three twiſts: the twiſt is made of more or leſs threads, according as the cable is to be thicker or thinner.

In the manufacture of cables, after the ropes are made, they uſe ſticks, which they paſs firſt between the ropes of which they make the ſtrands, and afterwards between the ſtrands of which they make the cable, to the end that they may all twiſt the better, and be more regularly wound together; and alſo, to prevent them from entwining or entangling, they hang, at the end of each ſtrand and of each rope, a weight of lead or of ſtone.

The number of threads each cable is compoſed of is always proportioned to its length and thickneſs; and it is by this number of threads that its weight and value are aſcertained: thus, a cable of three inches circumference, or one inch diameter, ought to conſiſt of 48 ordinary threads, and to weigh 192 pounds; and on this foundation is calculated the following table, very uſeful for all people engaged in marine commerce, who fit out merchantmen for their own account, or freight them for the account of others.

A table of the number of threads and weight of cables of different circumferences.

Circumf.	Threads.	Weight.
3 inches	48	192 pounds.
4	77	308
5 inches	121	484 pounds
6	174	696
7	238	952
8	311	1244
9	393	1572
10	485	1940
11	598	2392
12	699	2796
13	821	3284
14	952	3808
15	1093	4372
16	1244	4976
17	1404	5616
18	1574	6296
19	1754	7016
20	1943	7772

Cable's || Cabot.

Sheet-Anchor CABLE, is the greateſt cable belonging to a ſhip.

Stream CABLE, a hawſer or rope, ſomething ſmaller than the bowers, and uſed to moor the ſhip in a river or haven, ſheltered from the wind and ſea, &c.

Serve or *Plate the* CABLE, is to bind it about with ropes, clouts, &c. to keep it from galling in the hawſe.

To Splice a CABLE, is to make two pieces faſt together, by working the ſeveral threads of the rope the one into the other.

Pay more CABLE, is to let more out of the ſhip. *Pay cheap the Cable*, is to hand it out apace. *Veer more Cable*, is to let more out, &c.

Cable's Length, a meaſure of 120 fathoms, or of the uſual length of the cable.

CABLED, in *Heraldry*, a term applied to a croſs formed of the two ends of a ſhip's cable; ſometimes alſo to a croſs covered over with rounds of rope; more properly called a *croſs carded*.

Cabled Flute, in *Architecture*, ſuch flutes as are filled up with pieces in the form of a cable.

CABO DE ISTRIA, the capital town of the province of Iſtria, in the territory of Venice; and the ſee of a biſhop. It is ſeated on a ſmall iſland in the gulf of Venice, and is joined to the main land by draw-bridges. E. Long. 14. 22. N. Lat. 45. 49.

CABOCHED, in *Heraldry*, is when the heads of beaſts are borne without any part of the neck, full faced.

CABOLETTO, in commerce, a coin of the republic of Genoa, worth about 3d. of our money.

CABOT, SEBASTIAN, the firſt diſcoverer of the continent of America, was the ſon of John Cabot, a Venetian. He was born at Briſtol in 1477; and was taught by his father, arithmetic, geometry, and coſmography. Before he was 20 years of age he made ſeveral voyages. The firſt of any conſequence ſeems to have been made with his father, who had a commiſſion from Henry VII. for the diſcovery of a north-weſt paſſage to India. They ſailed in the ſpring of 1497; and proceeding to the north-weſt they diſcovered land, which for that reaſon they called *Primaviſta*, or *Newfoundland*. Another ſmaller iſland they called *St John*, from its being diſcovered on the feaſt of St John Baptiſt; after which, they ſailed along the coaſt of America as far as Cape Florida, and then returned to England

Cabot, Cabra.

land with a good cargo, and three Indians aboard. Stowe and Speed aſcribe theſe diſcoveries wholly to Sebaſtian, without mentioning his father. It is probable that Sebaſtian, after his father's death, made ſeveral voyages to theſe parts, as a map of his diſcoveries, drawn by himſelf, was hung up in the privy garden at Whitehall. However, hiſtory gives but little account of his life for near 20 years: when he went to Spain, where he was made pilot-major, and intruſted with reviewing all projects for diſcoveries, which were then very numerous. His great capacity and approved integrity induced many eminent merchants to treat with him about a voyage by the new found ſtraits of Magellan to the Moluccas. He therefore failed in 1525, firſt to the Canaries; then to the Cape de Verd iſlands; thence to St Auguſtine and the iſland of Patos; when ſome of his people beginning to be mutinous, and refuſing to paſs through the ſtraits, he laid aſide the deſign of ſailing to the Moluccas; left ſome of the principal mutineers upon a deſert iſland; and, ſailing up the rivers of Plate and Paraguay, diſcovered, and built forts in, a large tract of fine country, that produced gold, ſilver, and other rich commodities. He thence deſpatched meſſengers to Spain for a ſupply of proviſions, ammunition, goods for trade, and a recruit of men: but his requeſt not being readily complied with, after ſtaying five years in America, he returned home; where he met with a cold reception, the merchants being diſpleaſed at his not having purſued his voyage to the Moluccas, while his treatment of the mutineers had given umbrage at court. Hence he returned to England; and being introduced to the duke of Somerſet, then lord protector, a new office was erected for him: he was made governor of the myſtery and company of the merchant-adventurers for the diſcovery of regions, dominions, iſlands, and places unknown; a penſion was granted him, by letters patent, of 166l. 13s. 4d. per annum; and he was conſulted in all affairs relative to trade. In 1522, by his intereſt, the court fitted out ſome ſhips for the diſcovery of the northern parts of the world. This produced the firſt voyage the Engliſh made to Ruſſia, and the beginning of that commerce which has ever ſince been carried on between the two nations. The Ruſſia company was now founded by a charter granted by Philip and Mary; and of this company Sebaſtian was appointed governor for life. He is ſaid to be the firſt who took notice of the variation of the needle, and who publiſhed a map of the world. The exact time of his death is not known, but he lived to be above 70 years of age.

CABRA, a town of the kingdom of Tombut in Africa. It is a large town, but without walls; and is ſeated on the river Niger, about 12 miles from Tombut. The houſes are built in the ſhape of bells; and the walls are made with ſtakes or hurdles, plaſtered with clay, and covered with reeds after the manner of thatch. This place is very much frequented by negroes who come here by water to trade. The town is very unhealthy, which is probably owing to its low ſituation. The colour of the inhabitants is black, and their religion a ſort of Mahometaniſm. They have plenty of corn, cattle, milk, and butter; but ſalt is very ſcarce. The judge who decides controverſies is appointed by the king of Tombut. E. Long. 0. 50. N. Lat. 14. 21.

Cabul ‖ Caceres.

CABUL, or Gaboul, a city of Aſia, and capital of the province of Cabuliſtan. It lies in E. Long. 68. 15. N. Lat. 33. 30. on the frontiers of Great Bukharia, on the ſouth ſide of the mountains which divide the territories of the Mogul from that part of Great Tartary. It is one of the fineſt places in that part of the world; large, rich, and very populous. As it is conſidered as the key of the Great Mogul's dominions on that ſide, great care is taken to keep its fortifications in repair, and a numerous garriſon is maintained for its ſecurity. It lies on the road between Samarcand and Lahor; and is much frequented by the Tartars, Perſians, and Indians. The Uſbec Tartars drive there a great trade in ſlaves and horſes, of which it is ſaid that no fewer are ſold than 60,000 annually. The Perſians bring black cattle and ſheep, which renders proviſions very cheap. They have alſo wine, and plenty of all ſorts of eatables. The city ſtands on a little river which falls into the Indus, and thereby affords a ſhort and ſpeedy paſſage for all the rich commodities in the country behind it, which when brought to Cabul, are there exchanged for ſlaves and horſes, and then conveyed by merchants of different countries to all parts of the world. The inhabitants are moſt of them Indian pagans, though the officers of the Mogul and moſt of the garriſon are Mahometans.

CABULISTAN, a province of Aſia, formerly belonging to the Great Mogul; but ceded in 1739 to Kouli Khan, who at that time governed Perſia. It is bounded on the north by Bukharia, on the eaſt by Caſchmire, on the weſt by Zabuliſtan and Candahar, and on the ſouth by Moultan. It is 250 miles in length 240 in breadth, and its chief town is Cabul. This country in general is not very fruitful; but in the vales they have good paſture lands. The roads are much infeſted with banditti; which obliges the natives to have guards for the ſecurity of travellers. The religion of the Cabuliſtans is pagan; and their extraordinary time of devotion is the full moon in February, and continues for two days. At this time they are clothed in red, make their offerings, dance to the ſound of the trumpet, and make viſits to their friends in maſquerade dreſſes. They ſay, their god Cruſman killed a giant who was his enemy, and that he appeared like a little child; in memory of which, they cauſe a child to ſhoot at the figure of a giant. Thoſe of the ſame tribe make bonfires, and feaſt together in a jovial manner. The moral part of their religion conſiſts in charity; for which reaſon, they dig wells and build houſes for the accommodation of travellers. They have plenty of proviſions, mines of iron, myrobolans, aromatic woods, and drugs of many kinds. They carry on a great trade with the neighbouring countries; by which means they are very rich, and are ſupplied with plenty of all things.

CABURNS, on ſhip board, are ſmall lines made of ſpun yarn, to bind cables, ſeize tackles, or the like.

CACALIA. See Botany *Index*.

CACAO. See Theobroma, Botany *Index*.

CACCOONS. See Flevillea, Botany *Index*.

CACERES, a town of Spain in the province of Eſtremadura, is ſeated on the river Saler, and noted for the exceeding fine wool which the ſheep bear in the neighbourhood. Between this town and Brocos, there is a wood, where the allies defeated the rear-guard of the

Cachalot || Cachao.

the duke of Berwick, on the 7th of April 1706. E. Long. 6. 47. N. Lat. 39. 15.

CACHALOT. See PHYSETER, CETOLOGY *Index*.

CACHAN, or CASHAN, a conſiderable town of Perſia, in Irac Agemi, where they carry on an extenſive trade in ſilks, ſilver and gold brocades, and fine earthen ware. It is ſituated in a vaſt plain, 55 miles from Iſpahan. E. Long. 50. 2. N. Lat. 34. 10.

CACHAO, a province in the kingdom of Tonquin in Aſia, ſituated in the heart of the kingdom, and ſurrounded by the other ſeven. Its ſoil is fertile, and in ſome places mountainous, abounding with a variety of trees, and particularly that of varniſh. Moſt of theſe provinces carry on ſome branch of the ſilk manufacture, but this moſt of all. It takes its name from the capital, which is alſo the metropolis of the whole kingdom, though in other reſpects hardly comparable to a Chineſe town of the third rank.

CACHAO, a city of the province of that name, in the kingdom of Tonquin in Aſia, ſituated in E. Long. 105. 31. N. Lat. 22. 10. at about 80 leagues diſtance from the ſea. It is prodigiouſly crowded with people, inſomuch that the ſtreets are hardly paſſable, eſpecially on market days. Theſe vaſt crowds, however, come moſtly from the neighbouring villages; upon which account theſe villages have been allowed their halls in particular parts of the city, where they bring and diſpoſe of their wares. The town itſelf, though the metropolis of the whole Tonquineſe kingdom, hath neither walls nor fortifications. The principal ſtreets are wide and airy, but the reſt of them narrow and ill paved; and except the palace royal and arſenal, the town has little elſe worth notice. The houſes are low and mean, moſtly built of wood and clay, and not above one ſtory high. The magazines and warehouſes belonging to foreigners are the only edifices built of brick: and theſe, though plain, yet, by reaſon of their height and more elegant ſtructure, make a conſiderable ſhow among thoſe rows of wooden huts. From the combuſtibility of its edifices, this city ſuffers frequent and dreadful conflagrations. Theſe ſpread with ſuch ſurpriſing velocity, that ſome thouſands of houſes are often laid in aſhes before the fire can be extinguiſhed. To prevent theſe ſad conſequences, every houſe hath, either in its yard or even in its centre, ſome low building of brick, in form of an oven, into which the inhabitants on the firſt alarm convey their moſt valuable goods. Beſides this precaution, which every family takes to ſecure their goods, the government obliges them to keep a ciſtern, or ſome other capacious veſſel, always full of water on the top of their houſe, to be ready on all occaſions of this nature: as likewiſe a long pole and bucket, to throw water from the kennel upon the houſes. If theſe two expedients fail of ſuppreſſing the flames, they immediately cut the ſtraps which faſten the thatch to the walls, and let it fall in and waſte itſelf on the ground. The king's palace ſtands in the centre of the city; and is ſurrounded with a ſtout wall, within whoſe cincture are ſeen a great number of apartments two ſtories high, whoſe fronts and portals have ſomething of the grand taſte. Thoſe of the king and his wives are embelliſhed with variety of carvings and gildings after the Indian manner, and all finely varniſhed. In the outer court are a vaſt number of ſumptuous ſtables for the king's horſes and elephants. The appearance of the inner courts can only be conjectured; for the avenues are not only ſhut to all ſtrangers, but even to the king's ſubjects, except thoſe of the privy council, and the chief miniſters of ſtate; yet we are told, that there are ſtaircaſes by which people may mount up to the top of the walls, which are about 18 or 20 feet high; from whence they may have a diſtant view of the royal apartments, and of the fine parterres and fiſh ponds that are between the cincture and them. The front wall hath a large gate well ornamented, which is never opened but when the king goes in and out; but at ſome diſtance from it on each ſide there are two poſterns, at which the courtiers and ſervants may go in and out. This cincture, which is of a vaſt circumference, is faced with brick within and without, and the whole ſtructure is terminated by wide ſpacious gardens; which, though ſtored with great variety of proper ornaments, are deſtitute of the grandeur and elegance obſerved in the palaces of European princes. Beſides this palace, the ruins of one ſtill more magnificent are to be obſerved, and are called *Libatvia*. The circumference is ſaid to have been betwixt ſix and ſeven miles; ſome arches, porticoes, and other ornaments are ſtill remaining; from which, and ſome of its courts paved with marble, it may be concluded to have been as magnificent a ſtructure as any of the eaſtern parts can ſhow. The arſenal is likewiſe a large and noble building, well ſtored with ammunition and artillery. The Engliſh factory is ſituated on the north ſide of the city, fronting the river *Song-koy*. It is a handſome low-built houſe, with a ſpacious dining room in the centre; and on each ſide are the apartments of the merchants, factors, and ſervants. At each end of the building are ſmaller houſes for other uſes, as ſtore-houſes, kitchen, &c. which form two wings with the ſquare in the middle, and parallel with the river, near the bank of which ſtands a long flag-ſtaff, on which they commonly diſplay the Engliſh colours on Sundays and all remarkable days. Adjoining to it, on the ſouth ſide, is the Daniſh factory, which is neither ſo large nor ſo handſome. On the ſame ſide of the river runs a long dike, whoſe timber and ſtones are ſo firmly faſtened together, that no part of it can be ſtirred without moving the whole. This work was raiſed on thoſe banks to prevent the river, during the time of their vaſt rains, from overflowing the city; and it has hitherto anſwered its end; for though the town ſtands high enough to be in no danger from land floods, it might yet have been otherwiſe frequently damaged, if not totally laid under water, by the overflowing of that river. Some curious obſervations have been communicated to the Royal Society concerning differences between the tides of thoſe ſeas and thoſe of Europe, viz. that on the Tonquineſe coaſt ebbs and flows but once in 24 hours; that is, that the tide is riſing during the ſpace of 12 hours, and can be eaſily perceived during two of the moon's quarters, but can hardly be obſerved during the other two. In the ſpring tides, which laſt 14 days, the waters begin to riſe at the riſing of the moon; whereas in the low tides, which continue the ſame number of days, the tide begins not till that planet has got below the horizon. Whilſt it is paſſing through the ſix northern ſigns, the tides are obſerved to vary greatly, to riſe ſometimes very high, and ſome-

Cachao.

Cachectic || Cactus.

times to be very low; but when it is once got into the ſouthern part of the zodiac, they are then found to be more even and regular.

CACHECTIC, ſomething partaking of the nature of, or belonging to, a cachexy.

CACHEO, a town of Negroland in Africa, ſeated on the river St Domingo. It is ſubject to the Portugueſe, who have three forts there, and carry on a great trade in wax and ſlaves. W. Long, 14. 55. N. Lat. 12. 0.

CACHEXY, in *Medicine*, a vitious ſtate of the humours and whole habit. See MEDICINE *Index*.

CACHRYS. See BOTANY *Index*.

CACHUNDE, the name of a medicine, highly celebrated among the Chineſe and Indians, and made of ſeveral aromatic ingredients, the perfumes, medicinal earth, and precious ſtones: they make the whole into a ſtiff paſte, and form out of it ſeveral figures according to their fancy, which are dried for uſe; theſe are principally uſed in the Eaſt Indies, but are ſometimes brought over to Portugal. In China, the principal perſons uſually carry a ſmall piece in their mouths, which is a continued cordial, and gives their breath a very ſweet ſmell. It is a highly valuable medicine, alſo, in all nervous complaints; and is eſteemed a prolonger of life, and a provocative to venery, the two great intentions of moſt of the medicines in uſe in the Eaſt.

CACOCHYLIA, or CACOCHYMIA, a vitious ſtate of the vital humours, eſpecially of the maſs of blood; ariſing either from a diſorder of the ſecretions or excretions, or from external contagion. The word is Greek, compounded of *κακος ill*, and *χυμος juice*.

CACOPHONIA, in *Grammar* and *Rhetoric*, the meeting of two letters, or ſyllables, which yield an uncouth and diſagreeable ſound. the word is compounded of *κακος evil*, and *φωνη voice*.

CACOPHONIA, in *Medicine*, denotes a vice or depravation of the voice or ſpeech; of which there are two ſpecies, *aphonia* and *dyſphonia*.

CACTUS. See BOTANY *Index*.

The cacti are plants of a ſingular ſtructure, but eſpecially the larger kinds of them; which appear like a large, fleſhy, green melon, with deep ribs, ſet all over with ſtrong ſharp thorns, and, when the plants are cut through the middle, their inſide is a ſoft, pale-green, fleſhy ſubſtance, very full of moiſture. The fruit of all the ſpecies is frequently eaten by the inhabitants of the Weſt Indies. The fruits are about three quarters of an inch in length, of a taper form, drawing to a point at the bottom toward the plant, but blunt at the top where the empalement of the flower was ſituated. The taſte is agreeably acid, which in a hot country muſt render the fruit more grateful.

The cochineal animals are ſupported on a ſpecies called *cactus cochenillifer*.—The flower of the cactus grandiflora (one of the creeping cereuſes) is ſaid to be as grand and beautiful as any in the vegetable ſyſtem: It begins to open in the evening about ſeven o'clock, is in perfection about eleven, and fades about four in the morning; ſo that the ſame flower only continues in perfection about ſix hours. The calyx when expanded is about a foot in diameter, of a ſplendid yellow within, and a dark brown without; the petals are many, and of a pure white; and the great number of recurved ſtamina, ſurrounding the ſtyle in the centre of the flower, make a grand appearance, to which may be added the fine ſcent, which perfumes the air to a conſiderable diſtance. It flowers in July.

Cacus || Cadence.

CACUS, in fabulous hiſtory, an Italian ſhepherd upon Mount Aventine. As Hercules was driving home the herd of King Geryon whom he had ſlain, Cacus robbed him of ſome of his oxen, which he drew backward into his den leſt they ſhould be diſcovered. Hercules at laſt finding them out by their lowing, or the robbery being diſcovered to him, killed Cacus with his club. He was Vulcan's ſon, of prodigious bulk, and half man half ſatyr.

CADAN, a town of Bohemia, in the circle of Zats, ſeated on the northern bank of the river Egra, in E. Long. 13. 34. N. Lat. 50. 20.

CADARI, or KADARI, a ſect of Mahometans, who aſſert free will; attribute the actions of men to men alone, not to any ſecret power determining the will; and deny all abſolute decrees, and predeſtination. The author of this ſect was Mabeb ben Kaled al Gihoni, who ſuffered martyrdom for it. The word comes from the Arabic, קדר, *cadara*, "power." Ben Aun calls the Cadarians the Magi or Manichees of the Muſſelmans.

CADE, a cag, caſk or barrel. A cade of herrings is a veſſel containing the quantity of 500 red herrings, or 1000 ſprats.

CADE Lamb, a young lamb weaned, aad brought up by hand, in a houſe; called, in the North, *pet lamb*.

CADE Oil, in the *Materia Medica*, a name given to an oil much in uſe in ſome parts of France and Germany. The phyſicians call it *oleum cadæ*, or *oleum de cada*. This is ſuppoſed by ſome to be the piſſelæum of the ancients, but improperly; it is made of the fruit of the oxycedrus, which is called by the people of theſe places *cada*.

CADE Worm, in *Zoology*, the maggot or worm of a fly called *phryganea*. It is uſed as a bait in angling. See PHRYGANEA, ENTOMOLOGY *Index*.

CADEA, or THE LEAGUE OF THE HOUSE OF GOD, is one of thoſe that compoſe the republic of the Griſons, and the moſt powerful and extenſive of them all. It contains the biſhopric of Coire, the great valley of Engadine, and that of Bragail or Pregal. Of the 11 great, or 21 ſmall communities, there are but two that ſpeak the German language; that of the reſt is called the *Rhetic*, and is a dialect of the Italian. The Proteſtant religion is moſt prevalent in this league, which has been allied to the Swiſs cantons ever ſince the year 1498. Coire is the capital town.

CADENAC, a town of France, in Querci, on the confines of Rouergue, ſeated on the river Lot, in E. Long. 2. 12. N. Lat. 44. 36.

CADENCE, or REPOSE, in *Muſic*, (from the Latin *cadere* "to fall or deſcend"); the termination of an harmonical phraſe on a repoſe, or on a perfect chord. See MUSIC, Art. 73—76, and 132—137.

CADENCE, in *Reading*, is a falling of the voice below the key note at the cloſe of every period. In reading, whether proſe or verſe, a certain tone is aſſumed which is called the *key note;* and in this tone the bulk of the words are ſounded: but this note is generally lowered towards the cloſe of every ſentence.

Cadence || Cadi.

CADENCE, in the manege, an equal meaſure or proportion, obſerved by a horſe in all his motions; ſo that his times have an equal regard to one another, the one does not embrace or take in more ground than the other, and the horſe obſerves his ground regularly.

CADENE, one of the ſorts of carpets which the Europeans import from the Levant. They are the worſt ſort of all, and are ſold by the piece, from one to two piaſtres per carpet.

CADENET, a town of France in Provence, and in the vigurie of Apt. E. Long. 5. 30. Lat. 43. 40.

CADES, or KADESH, in *Ancient Geography*, a town in the wilderneſs of Zin, in Arabia Petræa; the firſt encampment of the Iſraelites, after their departure from Eziongeber; and from which the wilderneſs of Zin was called Cades; the burial place of Miriam, with the rock and water of Meribah in it. Another *Cades*, a town of the tribe of Judah, Joſhua xv. 23. *Cadeſbarnea*, called alſo *Cades*.

CADESBARNEA, in *Ancient Geography*, a town of the wilderneſs of Paran, on the confines of Canaan, from which the ſpies were ſent out; ſometimes ſimply called *Cades*, but diſtinct from the Cades in the wilderneſs of Zin.

CADET, the younger ſon of a family, is a term naturalized in our language from the French. At Paris, among the citizens, the cadets have an equal patrimony with the reſt. At Caux, in Normandy, the cuſtom, as with us, is to leave all to the eldeſt, except a ſmall portion to the cadets. In Spain, it is uſual for one of the cadets in great families to take the mother's name.

CADET is alſo a military term, denoting a young gentleman who chooſes to carry arms in a marching regiment as a private man. His views are, to acquire ſome knowledge in the art of war, and to obtain a commiſſion in the army. Cadet differs from volunteer, as the former takes pay, whereas the latter ſerves without pay.

CADI, or CADHI, a judge of civil affairs in the Turkiſh empire. It is generally taken for the judge of a town; judges of provinces being diſtinguiſhed by the appellation of *mollas*.

We find numerous complaints of the avarice, iniquity, and extortion, of the Turkiſh cadis; all juſtice is here venal; the people bribe the cadis, the cadis bribe the moulas, the moulas the cadileſchers, and the cadileſchers the mufti. Each cadi has his ſerjeants, who are to ſummon perſons to appear and anſwer complaints. If the party ſummoned fails to appear at the hour appointed, ſentence is paſſed in favour of his adverſary. It is uſually vain to appeal from the ſentences of the cadi, ſince the affair is never heard anew, but judgment is paſſed on the caſe as ſtated by the cadi. But the cadis are often caſhiered and puniſhed for crying injuſtice with the baſtinado and mulcts; the law, however, does not allow them to be put to death. Conſtantinople has had cadis ever ſince the year 1390, when Bajazet I. obliged John Paleologus, emperor of the Greeks, to receive cadis into the city to judge all controverſies happening between the Greeks and the Turks ſettled there. In ſome countries of Africa, the cadis are alſo judges of religious matters. Among the Moors cadis is the denomination of their higher order of prieſts or doctors, anſwering to the rabbins among the Jews.

Cadiaci || Cadiz.

CADIACI, the Turkiſh name of Chalcedon. See CHALCEDON.

CADILESCHER, a capital officer of juſtice among the Turks, anſwering to a chief juſtice among us.

It is ſaid, that this authority was originally confined to the ſoldiery; but that, at preſent, it extends itſelf to the determination of all kinds of law-ſuits; yet is nevertheleſs ſubject to appeals.

There are but three cadileſchers in all the grand ſignior's territories; the firſt is that of Europe; the ſecond, of Natolia; and the third reſides at Grand Cairo. This laſt is the moſt conſiderable: they have their ſeats in the divan next to the grand vizir.

CADILLAC, a town of France in Guienne, and in Bazadois, near the river Garonne, with a handſome caſtle, ſituated in W. Long. 0. 15. N. Lat. 44. 37.

CADIZ, a city and port town of Andaluſia in Spain, ſituated on the iſland of Leon, oppoſite to Port St Mary on the continent, about 60 miles ſouth-weſt of Seville, and 40 north-weſt of Gibraltar. W. Long. 6. 40. N. Lat. 36. 30.

It occupies the whole ſurface of the weſtern extremity of the iſland, which is compoſed of two large circular parts, joined together by a very narrow bank of ſand, forming altogether the figure of a chain-ſhot. At the ſouth-eaſt end, the ancient bridge of Suaco, thrown over a deep channel or river, affords a communication between the iſland and the continent; a ſtrong line of works defends the city from all approaches along the iſthmus; and, to render them ſtill more difficult, all the gardens and little villas on the beach were in 1762 cleared away, and a dreary ſandy glacis left in their room, ſo that now there is ſcarce a tree on the whole iſland.

Except the *Calle Ancha*, all the ſtreets are narrow, ill paved, and inſufferably ſtinking. They are all drawn in ſtraight lines, and moſt of them interſect each other at right angles. The ſwarms of rats that in the nights run about the ſtreets are innumerable; whole droves of them paſs and repaſs continually, and theſe their midnight revels are extremely troubleſome to ſuch as walk late. The houſes are lofty, with each a veſtibule, which being left open till night, ſerves paſſengers to retire to; this cuſtom, which prevails throughout Spain, renders theſe places exceedingly offenſive. In the middle of the houſe is a court like a deep well, under which is generally a ciſtern, the breeding place of gnats and moſquitos; the ground floors are warehouſes, the firſt ſtories compting-houſe or kitchen, and the principal apartment up two pair of ſtairs. The roofs are flat, covered with an impenetrable cement, and few are without a *mirador* or turret for the purpoſe of commanding a view of the ſea. Round the parapet-wall at top are placed rows of ſquare pillars, meant either for ornament according to ſome traditional mode of decoration, or to fix awnings to, that ſuch as ſit there for the benefit of the ſea breeze may be ſheltered from the rays of the ſun; but the moſt common uſe made of them, is to faſten ropes for drying linen upon. High above all theſe pinnacles, which give Cadiz a moſt ſingular appearance, ſtands

Cadiz. the tower of ſignals. Here flags are hung out on the firſt ſight of a ſail, marking the ſize of the ſhip, the nation it belongs to, and, if a Spaniſh Indiaman, the port of the Indies it comes from. The ſhips are acquainted with the proper ſignals to be made, and theſe are repeated by the watchmen of the tower: as painted liſts are in every houſe, perſons concerned in commerce ſoon learn the marks.

The city is divided into 24 quarters, under the inſpection of as many commiſſioners of police; and its population is reckoned at 140,000 inhabitants, of which 12,000 are French, and at leaſt as many more Italians. The ſquare of Saint Antonia is large, and tolerably handſome, and there are a few ſmaller openings of no great note. The public walk, or Alameda, is pleaſant in the evening: it is fenced off the coach road by a marble rail. The ſea air prevents the trees from thriving, and deſtroys all hopes of future ſhade.

From the Alameda, continuing your walk weſtwards, you come to the Campoſanto, a large eſplanade, the only airing-place for coaches; it turns round moſt part of the weſt and ſouth ſides of the iſland, but the buildings are ſtraggling and ugly; the only edifice of any ſhow is the new orphan houſe; oppoſite to it is the fortreſs of St Sebaſtian, built on a neck of land running out into the ſea. The round tower at the extremity is ſuppoſed to have ſaved the city, in the great earthquake of 1755, from being ſwept away by the fury of the waves. The building proved ſufficiently ſolid to withſtand the ſhock, and break the immenſe volume of water that threatened deſtruction to the whole iſland. In the narrow part of the iſthmus the ſurge beat over with amazing impetuoſity, and bore down all before it; among the reſt, the grandſon of the famous tragic poet Racine, who ſtrove in vain to eſcape, by urging his horſe to the utmoſt of his ſpeed. On St Sebaſtian's feaſt, a kind of wake or fair is held in the fort; an aſtoniſhing number of people then paſſing and repaſſing, on a ſtring of wooden bridges laid from rock to rock, makes a very lively moving picture.

From hence to the wooden circus where they exhibit the bull feaſts, you keep turning to the left cloſe above the ſea, which on all this ſide daſhes over large ledges of rock: the ſhore ſeems here abſolutely inacceſſible. On this ſhore ſtands the cathedral, a work of great expence, but carried on with ſo little vigour, that it is difficult to gueſs at the term of years it will require to bring it to perfection. The vaults are executed with great ſolidity. The arches, that ſpring from the cluſtered pilaſters to ſupport the roof of the church, are very bold; the minute ſculpture beſtowed upon them ſeems ſuperfluous, as all the effect will be loſt from their great height, and from the ſhade that will be thrown upon them by the filling up of the interſtices. From the ſea, the preſent top of the church reſembles the carcaſe of ſome huge monſter caſt upon its ſide, rearing its gigantic blanched ribs high above the buildings of the city. The outward caſings are to be of white marble, the bars of the windows of bronze.

Next, croſſing before the land gate and barracks, a ſuperb edifice for ſtrength, convenience, and cleanlineſs, you come down to the ramparts that defend the city on the ſide of the bay. If the proſpect to the ocean is ſolemn, that towards the main land is animated in the higheſt degree; the men of war ride in the eaſtern boſom of the bay; lower down the merchantmen are ſpread far and near; and cloſe to the town an incredible number of barks, of various ſhapes and ſizes, cover the ſurface of the water, ſome moored and ſome in motion, carrying goods to and fro. The oppoſite ſhore of Spain is ſtudded with white houſes, and enlivened by the towns of St Mary's, Port-real, and others, behind which, eaſtward, on a ridge of hills, ſtands Medina Sidonia, and further back riſe the mountains of Granada. Weſtward, Rota cloſes the horizon, near which was anciently the iſland and city of Tarteſſus, now covered by the ſea, but at low water ſome part of the ruins are ſtill to be diſcerned. In a large baſtion, jutting out into the bay, they have built the cuſtom-houſe, the firſt ſtory of which is level with the walk upon the walls. When it was reſolved to erect a building ſo neceſſary to this great emporium of trade, the marquis di Squillace gave orders that no expence ſhould be ſpared, and the moſt intelligent architects employed, in order to erect a monument, which by its taſte and magnificence might excite the admiration of poſterity: the reſult of theſe precautions proved a piece of vile architecture, compoſed of the worſt of materials.

Cadiz || Cadmus.

The ſtir here is prodigious during the laſt months of the ſtay of the flota. The packers poſſeſs the art of preſſing goods to great perfection; but, as they pay the freight according to the cubic palms of each bale, they are apt to ſqueeze down the cloths and linens ſo very cloſe and hard, as ſometimes to render them unfit for uſe. The exportation of French luxuries in dreſs is enormous; Lyons furniſhes moſt of them; England ſends out bale goods; Brittany and the north linens. Every commercial nation has a conſul reſident at Cadiz; thoſe of England and France are the only ones not allowed to have any concern in trade.

In 1596, Cadiz was taken, pillaged, and burnt by the Engliſh; but in 1702 it was attempted in conjunction with the Dutch, without ſucceſs.

CADIZADELITES, a ſect of Mahometans very like the ancient Stoics. They ſhun feaſts and diverſions, and affect an extraordinary gravity in all their actions; they are continually talking of God, and ſome of them make a jumble of Chriſtianity and Mahometaniſm; they drink wine, even in the faſt of the Ramazan; they love and protect the Chriſtians; they believe that Mahomet is the Holy Ghoſt, practiſe circumciſion, and juſtify it by the example of Jeſus Chriſt.

CADMEAN Letters, the ancient Greek or Ionic characters, ſuch as they were firſt brought by Cadmus from Phœnicia; whence Herodotus alſo calls them *Phœnician letters*. According to ſome writers, Cadmus was not the inventor, nor even importer of the Greek letters, but only the modeller and reformer thereof; and it was hence they acquired the appellation *Cadmean* or *Phœnician letters*; whereas before that time they had been called *Pelaſgian letters*.

CADMIA. See Calamine.

CADMUS, in fabulous hiſtory, king of Thebes, the ſon of Agenor king of Phœnicia, and the brother of Phœnix, Cilix, and Europa. He carried into Greece the 16 ſimple letters of the Greek alphabet; and there built Thebes, in Bœotia. The poets ſay, that

Cadmus || Caduceus.

that he left his native country in ſearch of his ſiſter Europa, whom Jupiter had carried away in the form of a bull: and that, inquiring of the Delphic oracle for a ſettlement, he was anſwered, that he ſhould follow the direction of a cow, and build a city where ſhe lay down. Having arrived among the Phocenſes, he was met by a cow, who conducted him through Bœotia to the place where Thebes was afterwards built: but as he was about to ſacrifice his guide to Pallas, he ſent two of his company to the fountain Dirce for water; when they being devoured by a ſerpent or dragon, he ſlew the monſter, and afterwards, by the advice of Pallas, ſowed his teeth, when there ſprung up a number of armed ſoldiers, who prepared to revenge the death of the ſerpent; but on his caſting a ſtone among theſe upſtart warriors, they turned their weapons againſt each other with ſuch animoſity, that only five ſurvived the combat, and theſe aſſiſted Cadmus in founding his new city. Afterwards, to recompenſe his labours, the gods gave him Harmonia, or Harmione, the daughter of Mars and Venus; and honoured his nuptials with preſents and peculiar marks of favour. But at length reſigning Thebes to Pentheus, Cadmus and Harmione went to govern the Ecclellenſes: when grown old, they were transformed into ſerpents; or, as others ſay, ſent to the Elyſian fields, in a chariot drawn by ſerpents. See THEBES.

CADMUS of Miletus, a celebrated Greek hiſtorian, was, according to Pliny, the firſt of the Greeks who wrote hiſtory in proſe. He flouriſhed about 550 before Chriſt.

CADORE, or PIEVE DE CADORE, a town of Italy, in the territory of Venice, and capital of a diſtrict called *Cadorino;* famous for the birth of Titian the painter. E. Long. 13. 45. N. Lat. 46. 25.

CADORINO, a province of Italy, in the territory of Venice; bounded on the eaſt by Friuli Proper, on the ſouth and weſt by the Belluneſe, and by the biſhopric of Brixen on the north. It is a very mountainous country, but pretty populous. The only town is Pieve de Cadore.

CADRITES, a ſort of Mahometan friars, who once a-week ſpend a great part of the night in turning round, holding each others hands, and repeating inceſſantly the word *hai*, which ſignifies *living*, and is one of the attributes of God; during which one of them plays on a flute. They never cut their hair, nor cover their heads; and always go bare-footed: they have liberty to quit their convent when they pleaſe, and to marry.

CADSAND, an iſland on the coaſt of Dutch Flanders, ſituated at the mouth of the Scheldt, whereby the Dutch command the navigation of that river.

CADUCEUS, in antiquity, Mercury's rod or ſceptre, being a wand entwiſted by two ſerpents, borne by that deity as the enſign of his quality and office, given him, according to the fable, by Apollo, for his ſeven-ſtringed harp. Wonderful properties are aſcribed to this rod by the poets; as laying men aſleep, raiſing the dead, &c.

It was alſo uſed by the ancients as a ſymbol of peace and concord: the Romans ſent the Carthaginians a javelin and a caduceus, offering them their choice either of war or peace. Among that people, thoſe who denounced war were called *feciales;* and thoſe who went to demand peace, *caduceatores*, becauſe they bore a caduccus in their hand.

Caduci || Cælius.

The caduceus found on medals is a common ſymbol, ſignifying good conduct, peace and proſperity. The rod expreſſes power, the two ſerpents prudence, and the two wings diligence.

CADUCI, (from *cado* "to fall"); the name of a claſs in Linnæus's *calycina*, conſiſting of plants whoſe calyx is a ſimple perianthium, ſupporting a ſingle flower or fructification, and falling off either before or with the petals. It ſtands oppoſed to the *claſſes perſiſtentes* in the ſame method, and is exemplified in muſtard and ranunculus.

CADURCI, CADURCUM, *Cadurcus*, and *Cadurx*, in *Ancient Geography*, a town of the Cadurci, a people of Aquitania; ſituated between the rivers Oldus, running from the north, and the Tarnis from the ſouth, and falling into the Garumna: Now *Cahors*, capital of the territory of the Querci, in Guienne. A part of the Cadurci, to the ſouth next the Tarnis, were called *Eleutheri.*

CADUS, in antiquity, a wine veſſel of a certain capacity, containing 80 amphoræ or firkins; each of which, according to the beſt accounts, held nine gallons.

CADUSII, in *Ancient Geography*, a people of Media Atropatene, ſituated to the weſt in the mountains, and reaching to the Caſpian ſea; between whom and the Medes perpetual war and enmity continued down to the time of Cyrus.

CÆCILIA, in *Zoology*, a genus of ſerpents belonging to the amphibia claſs. The cæcilia has no ſcales; it is ſmooth, and moves by means of lateral rugæ or prickles. The upper lip is prominent, and furniſhed with two tentacula. It has no tail. There are but two ſpecies of this ſerpent, viz. 1. The tentaculata, has 135 rugæ. It is about a foot long, and an inch in circumference, preſerving an uniform cylindrical ſhape from the one end to the other. The teeth are very ſmall. It has ſuch a reſemblance to an eel, that it may eaſily be miſtaken for one; but as it has neither fins nor gills, it cannot be claſſed with the fiſhes. It is a native of America, and its bite is not poiſonous. 2. The glutinoſa, has 340 rugæ or prickles above, and 10 below, the anus. It is of a browniſh colour, with a white line on the ſide, and is a native of the Indies.

CÆCUM, or COECUM, the blind gut. See ANATOMY *Index.*

CÆLIUM, in *Ancient Geography*, an inland town of Peucetia, a diviſion of Apulia; a place four or five miles above Barium or Bari, and which ſtill retains that name.

CÆLIUS MONS, (Itinerary); a town of Vindelicia, on the right or weſt ſide of the Ilargus. Now *Kelmuntz*, a ſmall town of Suabia, on the Iller.

CÆLIUS MONS at Rome. See COELIUS.

CÆLIUS, *Aurelianus*, an ancient phyſician, and the only one of the ſect of the Methodiſts of whom we have any remains. He was of Sicca, a town of Numidia; but in what age he lived, cannot be determined: it is probable, however, that he lived before Galen: ſince, though he carefully mentions all the phyſicians before him, he takes no notice of Galen. He had read over very diligently the ancient phyſi-

cians.

Caen || Caermarthen-ſhire.

cians of all ſects; and we are indebted to him for the knowledge of many dogmas which are not to be found but in his books *de celeribus et tardis paſſionibus*. He wrote as he himſelf tells us, ſeveral other works; but they are all periſhed.

CAEN, a handſome and conſiderable town of France, capital of Lower Normandy, with a celebrated univerſity, and an academy of literature. It contains 60 ſtreets, and 12 pariſhes. It has a caſtle with four towers, which were built by the Engliſh. The town-houſe is a large building with four great towers. The royal ſquare is the handſomeſt in all Normandy, and has fine houſes on three ſides of it; and in the middle is the ſtatue of Louis XIV. in a Roman habit, ſtanding on a marble pedeſtal, and ſurrounded with an iron balluſtrade. It is ſeated in a pleaſant country on the river Orne, about eight miles from the ſea. William the Conqueror was buried here, in the abbey of St Stephen, which he founded. W. Long. 0. 27. N. Lat. 49. 11.

CÆRE, in *Ancient Geography*, a town of Etruria, the royal reſidence of Mezentius. Its ancient name was *Argyllæ*. In Strabo's time not the leaſt veſtige of it remained, except the baths called *cæretana*. From this town the Roman cenſor's tables were called *cærites tabulæ*. In theſe were entered the names of ſuch as for ſome miſdemeanor forfeited their right of ſuffrage, or were degraded from a higher to a leſs honourable tribe. For the people of Cære hoſpitably receiving thoſe Romans who, after the taking of Rome by the Gauls, fled with their gods and the ſacred fire of Veſta, were, on the Romans recovering themſelves from this diſaſter, honoured with the privilege of the city, but without a right of voting.

CÆRITES TABULÆ. See the preceding article.

CAERFILLY, a town of Glamorganſhire in South Wales, ſeated between the rivers Taaff and Rumney, in a mooriſh ground among the hills. It is thought the walls, now in ruins, were built by the Romans; there being often Roman coins dug up there. W. Long. 3. 12. N. Lat. 51. 25.

CAERLEON, a town of Monmouthſhire in England, and a place of great antiquity. It was a Roman town, as is evident from the many Roman antiquities found here. It is commodiouſly ſituated on the river Uſk, over which there is a large wooden bridge. The houſes are generally built of ſtone, and there are the ruins of a caſtle ſtill to be ſeen. W. Long. 3. 0. N. Lat. 51. 40.

CAERMARTHEN-SHIRE, a county of Wales, bounded on the north by the Severn ſea or St George's channel, Cardiganſhire on the ſouth, the ſhires of Brecknock and Glamorgan on the eaſt, and Pembrokeſhire on the weſt. Its greateſt length is between 30 and 40 miles, and its breadth upwards of 20. The air is wholeſome, and the ſoil leſs rocky and mountainous than moſt other parts of Wales, and conſequently is proportionally more fertile both in corn and paſture. It has alſo plenty of wood, and is well ſupplied with coal and limeſtone. The moſt conſiderable rivers are the Towy, the Cothy, and the Tave; of which, the firſt abounds with excellent ſalmon. The principal towns are Caermarthen the capital, Kidwely, Lanimdovery, &c. This county abounds with ancient forts, camps, and tumuli or barrows. Near to Caermarthen, towards the eaſt, may be ſeen the ruins of Kaſtelk Karrey, which was ſituated on a ſteep and inacceſſible rock; and alſo ſeveral vaſt caverns, ſuppoſed to have been copper mines of the Romans. Near this ſpot is a fountain which ebbs and flows twice in 24 hours like the ſea.

Caermarthen || Caernarvon.

CAERMARTHEN, a town of Wales, and capital of the county of that name. It is ſituated on the river Fowey, over which it has a fine ſtone bridge. It is of great antiquity, being the Maridunum of Ptolemy. It is a populous, thriving, and polite place, many of the neighbouring gentry reſiding there in the winter. It is a corporation and county of itſelf, with power to make by-laws. Here were held the courts of chancery and exchequer for South Wales, till the whole was united to England in the reign of Henry VIII. Here was born the famous conjurer Merlin; and near the town is a wood called *Merlin's grove*, where he is ſaid to have often retired for contemplation. Many of his pretended prophecies are ſtill preſerved in the country. The town gives the title of *marquis* to his grace the duke of Leeds. It ſends one member to parliament, and the county another.

CAERNARVON-SHIRE, a county of Wales, bounded on the north and weſt by the ſea, on the ſouth by Merionethſhire, and on the eaſt is divided from Denbighſhire by the river Conway. It is about 40 miles in length, and 20 in breadth; and ſends one member to parliament for the ſhire, and another for the borough of Caernarvon. The air is very piercing; owing partly to the ſnow, that lies ſeven or eight months of the year upon ſome of the mountains, which are ſo high that they are called the *Britiſh Alps*; and partly to the great number of lakes, which are ſaid not to be fewer than 50 or 60. The ſoil in the valleys on the ſide next Ireland is pretty fertile, eſpecially in barley; great numbers of black cattle, ſheep, and goats, are fed on the mountains: and the ſea, lakes, and rivers, abound with variety of fiſh. The higheſt mountains in the county are thoſe called *Snowdon hills*, and *Pen-maen-mawr*, which laſt hangs over the ſea. There is a road cut out of the rock on the ſide next the ſea, guarded by a wall running along the edge of it on that ſide; but the traveller is ſometimes in danger of being cruſhed by the fall of pieces of the rock from the precipices above. The river Conway, though its courſe from the lake out of which it iſſues to its mouth is only 12 miles, yet is ſo deep, in conſequence of the many brooks it receives, that it is navigable by ſhips of good burden for eight miles. Pearls are found in large black muſcles taken in this river. The principal towns are Bangor, Caernarvon the capital, and Conway. In this county is an ancient road ſaid to have been made by Helena the mother of Conſtantine the Great; and Matthew of Weſtminſter aſſerts, that the body of Conſtantius the father of the ſame Conſtantine was found at Caernarvon in the year 1283, and interred in the pariſh church there by order of Edward I.

CAERNARVON, a town of Wales, and capital of the county of that name. It was built by Edward I. near the ſite of the ancient Segontium, after his conqueſt of the country in 1282, the ſituation being well adapted to overawe his new ſubjects. It had natural requiſites for ſtrength; being bounded on one ſide by the arm of the ſea called the *Menai*; by the eſtuary of the

Caernarvon || Cæſalpinia.

Sciont on another, exactly where it receives the tide from the former; on a third ſide, and a part of the fourth, by a cheek of the Menai; and the remainder has the appearance of having the inſulation completed by art. Edward undertook this great work immediately after his conqueſt of the country in 1282, and completed the fortifications and caſtle before 1284; for his queen, on April 25th in that year, brought forth within its walls Edward, firſt prince of Wales of the Engliſh line. It was built within the ſpace of one year, by the labour of the peaſants, and at the coſt of the chieftans of the country, on whom the conqueror impoſed the hateful taſk. The external ſtate of the walls and caſtle, Mr Pennant informs us, are at preſent exactly as they were in the time of Edward. The walls are defended by numbers of round towers, and have two principal gates: the eaſt, facing the mountains; the weſt, upon the Menai. The entrance into the caſtle is very auguſt, beneath a great tower, on the front of which appears the ſtatue of the founder, with a dagger in his hand, as if menacing his new acquired unwilling ſubjects. The gate had four portculliſes, and every requiſite of ſtrength. The towers are very beautiful. The eagle tower is remarkably fine, and has the addition of three ſlender angular turrets iſſuing from the top. Edward II. was born in a little dark room in this tower, not twelve feet long nor eight in breadth: ſo little did, in thoſe days, a royal conſort conſult either pomp or conveniency. The gate through which the affectionate Eleanor entered, to give the Welſh a prince of their own, who could not ſpeak a word of Engliſh, is at the fartheſt end, at a vaſt height above the outſide ground; ſo could only be approached by a drawbridge. The quay is a moſt beautiful walk along the ſide of the Menai, and commands a moſt agreeable view.

Caernarvon is deſtitute of manufactures, but has a briſk trade with London, Briſtol, Liverpool, and Ireland, for the ſeveral neceſſaries of life. It is the reſidence of numbers of genteel families, and contains ſeveral very good houſes. Edward I. beſtowed on this town its firſt royal charter, and made it a free borough. Among other privileges, none of the burgeſſes could be convicted of any crime committed between the rivers Conway and Dyfe, unleſs by a jury of their own townſmen. It is governed by a mayor, who, by patent, is created governor of the caſtle. It has one alderman, two bailiffs, a town clerk, and two ſerjeants at mace. The repreſentative of the place is elected by its burgeſſes, and thoſe of Conway, Pwllheli, Neſyn, and Crickaeth. The right of voting is in every one, reſident or non-reſident, admitted to their freedom. The town gives title of *earl* and *marquis* to the duke of Chandos, and has a good tide harbour.

CAERWIS, a market town of Flintſhire, in North Wales, ſituated in W. Long. 3. 25. N. Lat. 53. 20.

CÆSALPINIA Brasiletto, or *Braſil wood*. See Botany *Index*. Of this there are three ſpecies, the moſt remarkable of which is the braſilienſis, commonly called *Braſiletto*. It grows naturally in the warmeſt parts of America, from whence the wood is imported for the dyers, who uſe it much. The demand has been ſo great, that none of the large trees are left in any of the Britiſh plantations; ſo that Mr Cateſby owns himſelf ignorant of the dimenſions to which they grow. The largeſt remaining are not above two inches in thickneſs, and eight or nine feet in height. The branches are ſlender and full of ſmall prickles; the leaves are pinnated; the lobes growing oppoſite to one another, broad at their ends, with one notch. The flowers are white, papilionaceous, with many ſtamina and yellow apices, growing in a pyramidal ſpike, at the end of a long ſlender ſtalk: the pods encloſe ſeveral ſmall round ſeeds. The colour produced from this wood is greatly improved by ſolution of tin in aqua regia *. The ſecond ſort is a native of the ſame countries with the firſt, but is of a larger ſize. It ſends out many weak irregular branches, armed with ſhort, ſtrong, upright thorns. The leaves branch out in the ſame manner as the firſt; but the lobes, or ſmall leaves, are oval and entire. The flowers are produced in long ſpikes like thoſe of the former, but are variegated with red. Theſe plants may be propagated from ſeeds, which ſhould be ſown in ſmall pots filled with light rich earth early in the ſpring, and plunged in a bed of tanner's bark. Being tender, they require to be always kept in the ſtove, and to be treated in the ſame manner as other exotics of that kind.

Cæſalpinus, Cæſar.

* See *Colour-making* and *Dyeing*.

CÆSALPINUS, of Arezzo, profeſſor at Piſa, and afterwards phyſician to Pope Clement VIII. one of the capital writers in botany. See Botany *Index*.

CÆSAR, Julius, the illuſtrious Roman general and hiſtorian, was of the family of the Julii, who pretended they were deſcended from Venus by Æneas. The deſcendants of Aſcanius, ſon of Æneas and Creuſa, and ſurnamed *Julus*, lived in Alba till that city was ruined by Tullus Hoſtilius king of Rome, who carried them to Rome, where they flouriſhed. We do not find that they produced more than two branches. The firſt bore the name of *Tullus*, the other that of *Cæſar*. The moſt ancient of the Cæſars were thoſe who were in public employments in the 11th year of the firſt Punic war. After that time we find there was always ſome of that family who enjoyed public offices in the commonwealth, till the time of Caius Julius Cæſar, the ſubject of this article. He was born at Rome the 12th of the month Quintilis, year of the city 653, and loſt his father an. 669. By his valour and eloquence he ſoon acquired the higheſt reputation in the field and in the ſenate. Beloved and reſpected by his fellow citizens, he enjoyed ſucceſſively every magiſterial and military honour the public could beſtow conſiſtent with iis own free conſtitution. But at length having ſubdued Pompey the great rival of his growing power, his boundleſs ambition effaced the glory of his former actions: for, purſuing his favourite maxim, "that he had rather be the firſt man in a village than the ſecond in Rome," he procured himſelf to be choſen perpetual dictator; and, not content with this unconſtitutional power, his faction had reſolved to raiſe him to the imperial dignity; when the friends of the civil liberties of the republic raſhly aſſaſſinated him in the ſenate-houſe, where they ſhould only have ſeized him and brought him to a legal trial for uſurpation. By this impolitic meaſure they defeated their own purpoſe, involving the city in conſternation and terror, which produced general anarchy, and paved the way to the revolution they wanted to prevent; the monarchial government being abſolutely founded on the murder of Julius Cæſar. He fell in the 56th year of his age, 43 years before

Cæſar. before the Chriſtian era. His commentaries contain a hiſtory of his principal voyages, battles, and victories. The London edition in 1712, in folio, is preferred.

The detail of Cæſar's tranſactions (ſo far as is conſiſtent with the limits of this work) being given under the article Rome, we ſhall here only add a portrait of him as drawn by a philoſpher *.

* From the *Melanges Philoſophiques* of M. Ophelot.

"If, after the lapſe of 18 centuries, the truth may be publiſhed without offence, a philoſopher might, in the following terms, cenſure Cæſar without calumniating him, and applaud him without exciting his bluſhes.

"Cæſar had one predominant paſſion: it was the love of glory; and he paſſed 40 years of his life in ſeeking opportunities to foſter and encourage it. His ſoul, entirely abſorbed in ambition, did not open itſelf to other impulſes. He cultivated letters; but he did not love them with enthuſiaſm, becauſe he had not leiſure to become the firſt orator of Rome. He corrupted the one half of the Roman ladies, but his heart had no concern in the fiery ardours of his ſenſes. In the arms of Cleopatra, he thought of Pompey; and this ſingular man, who diſdained to have a partner in the empire of the world, would have bluſhed to have been for one inſtant the ſlave of a woman.

"We muſt not imagine, that Cæſar was born a warrior, as Sophocles and Milton were born poets. For, if nature had made him a citizen of Sybaris, he would have been the moſt voluptuous of men. If in our days he had been born in Pennſylvania, he would have been the moſt inoffenſive of Quakers, and would not have diſturbed the tranquillity of the new world.

"The moderation with which he conducted himſelf after his victories, has been highly extolled; but in this he ſhowed his penetration, not the goodneſs of his heart. Is it not obvious, that the diſplay of certain virtues is neceſſary to put in motion the political machine? It was requiſite that he ſhould have the appearance of clemency, if he inclined that Rome ſhould forgive him his victories. But what greatneſs of mind is there in a generoſity which follows on the uſurpation of the ſupreme power?

"Nature, while it marked Cæſar with a ſublime character, gave him alſo that ſpirit of perſeverance which renders it uſeful. He had no ſooner begun to reflect, than he admired Sylla; hated him, and yet wiſhed to imitate him. At the age of 15, he formed the project of being dictator. It was thus that the preſident Monteſquieu conceived, in his early youth, the idea of the Spirit of Laws.

"Phyſical qualities, as well as moral cauſes, contributed to give ſtrength to his character. Nature, which had made him for command, had given him an air of dignity. He had acquired that ſoft and inſinuating eloquence, which is perfectly ſuited to ſeduce vulgar minds, and has a powerful influence on the moſt cultivated. His love of pleaſure was a merit with the fair ſex; and women, who even in a republic can draw to them the ſuffrages and attention of men, have the higheſt importance in degenerate times. The ladies of his age were charmed with the proſpect of having a dictator whom they might ſubdue by their attractions.

"In vain did the genius of Cato watch for ſome time to ſuſtain the liberty of his country. It was unequal to contend with that of Cæſar. Of what avail were the eloquence, the philoſophy, and the virtue of this republican, when oppoſed by a man who had the addreſs to debauch the wife of every citizen whoſe intereſt he meant to engage; who, poſſeſſing an enthuſiaſm for glory, wept, becauſe, at the age of 30, he had not conquered the world like Alexander; and who, with the haughty temper of a deſpot, was more deſirous to be the firſt man in a village than the ſecond in Rome. Cæſar.

"Cæſar had the good fortune to exiſt in times of trouble and civil commotions, when the minds of men are put into a ferment; when opportunities of great actions are frequent; when talents are every thing, and thoſe who can only boaſt of their virtues are nothing. If he had lived an hundred years ſooner, he would have been no more than an obſcure villain; and, inſtead of giving laws to the world, would not have been able to produce any confuſion in it.

"I will here be bold enough to advance an idea, which may appear paradoxical to thoſe who weakly judge of men from what they achieve, and not from the principle which leads them to act. Nature formed in the ſame mould Cæſar, Mahomet, Cromwell, and Kouli Khan. They all of them united to genius that profound policy which renders it ſo powerful. They all of them had an evident ſuperiority over thoſe with whom they were ſurrounded; they were conſcious of this ſuperiority, and they made others conſcious of it. They were all of them born ſubjects, and became fortunate uſurpers. Had Cæſar been placed in Perſia, he would have made the conqueſt of India; in Arabia, he would have been the founder of a new religion; in London, he would have ſtabbed his ſovereign, or have procured his aſſaſſination under the ſanction of the laws. He reigned with glory over men whom he had reduced to be ſlaves; and, under one aſpect, he is to be conſidered as a hero; under another, as a monſter. But it would be unfortunate, indeed, for ſociety, if the poſſeſſion of ſuperior talents gave individuals a right to trouble its repoſe. Uſurpers accordingly have flatterers, but no friends; ſtrangers reſpect them; their ſubjects complain and ſubmit; it is in their own families that humanity finds her avengers. Cæſar was aſſaſſinated by his ſon, Mahomet was poiſoned by his wife, Kouli Khan was maſſacred by his nephew, and Cromwell only died in his bed becauſe his ſon Richard was a philoſopher.

"Cæſar, the tyrant of his country; Cæſar, who deſtroyed the agents of his crimes, if they failed in addreſs; Cæſar, in fine, the huſband of every wife, and the wife of every huſband, has been accounted a great man by the mob of writers. But it is only the philoſopher who knows how to mark the barrier between celebrity and greatneſs. The talents of this ſingular man, and the good fortune which conſtantly attended him till the moment of his aſſaſſination, have concealed the enormity of his actions."

Cæsar, in Roman antiquity, a title borne by all the emperors, from Julius Cæſar to the deſtruction of the empire. It was alſo uſed as a title of diſtinction for the intended or preſumptive heir of the empire, as *king of the Romans* is now uſed for that of the German empire.

This

Cæſar ‖ Cæſarians.

This title took its riſe from the ſurname of the firſt emperor, C. Julius Cæſar, which, by a decree of the ſenate all the ſucceeding emperors were to bear. Under his ſucceſſor, the appellation of *Auguſtus* being appropriated to the emperors, in compliment to that prince, the title *Cæſar* was given to the ſecond perſon in the empire, though ſtill it continued to be given to the firſt; and hence the difference betwixt Cæſar uſed ſimply, and Cæſar with the addition of Imperator Auguſtus.

The dignity of Cæſar remained to the ſecond of the empire, till Alexius Comnenus having elected Nicephorus Meliſſenus Cæſar by contract; and it being neceſſary to confer ſome higher dignity on his own brother Iſaacius, he created him Sebaſtocrator with the precedency over Meliſſenus; ordering, that in all acclamations, &c. Iſaacius Sebaſtocrator ſhould be named the ſecond, and Meliſſenus Cæſar the third.

CÆSAR, *Sir Julius*, a learned civilian, was deſcended by the female line from the duke de Ceſarini in Italy; and was born near Tottenham in Middleſex, in the year 1557. He was educated at Oxford, and afterwards ſtudied in the univerſity of Paris, where, in the year 1581, he was created doctor of the civil law, and two years after was admitted to the ſame degree at Oxford, and alſo became doctor of the canon law. He was advanced to many honourable employments, and for the laſt 20 years of his life was maſter of the rolls. He was remarkable for his extenſive bounty and charity to all perſons of worth, ſo that he ſeemed to be the almoner-general of the nation. He died in 1639, in the 79th year of his age. It is very remarkable that the manuſcripts of this lawyer were offered (by the executors of ſome of his deſcendants) to a cheeſemonger for waſte paper; but being timely inſpected by Mr Samuel Paterſon, this gentleman diſcovered their worth, and had the ſatisfaction to find his judgment confirmed by the profeſſion, to whom they were ſold in lots for upwards of 500l. in the year 1757.

CÆSAR *Auguſta*, or *Cæſarea Auguſta*, in *Ancient Geography*, a Roman colony ſituated on the river Iberus in the Hither Spain, before called *Salduba*, in the territories of the Edetani. Now commonly thought to be Saragoſa.

CÆSAREA, the name of ſeveral ancient cities, particularly one on the coaſt of Phœnicia. It was very conveniently ſituated for trade; but had a very dangerous harbour, ſo that no ſhips could be ſafe in it when the wind was at ſouth-weſt. Herod the Great king of Judea remedied this inconveniency at an immenſe expenſe and labour, making it one of the moſt convenient havens on that coaſt. He alſo beautified it with many buildings, and beſtowed 12 years on the finiſhing and adorning it.

CÆSAREAN operation. See MIDWIFERY.

CÆSARIANS, *Cæſarienſes*, in Roman antiquity, were officers or miniſters of the Roman emperors: They kept the account of the revenues of the emperors; and took poſſeſſion, in their name, of ſuch things as devolved or were confiſcated to them.

CÆSARODUNUM, in *Ancient Geography*, a town of the Turones in Celtic Gaul; now *Tours*, the capital of Touraine. See TOURS.

CÆSAROMAGUS, in *Ancient Geography*, a town of the Trinobantes in Britain; by ſome ſuppoſed to be *Chelmsford*, by others *Brentford*, and by others *Purfleet*.

Cæſaromagus ‖ Caffa.

CÆSENA, in *Ancient Geography*, a town of Gallia Ciſpadana, ſituated on the rivers Iſapis and Rubicon; now CECENA, which ſee.

CÆSIA SYLVA, in *Ancient Geography*, a wood in Germany, part of the great Sylva Hercynia, ſituated partly in the duchy of Cleves, and partly in Weſtphalia, between Weſel and Kesfield.

CÆSONES, a denomination given to thoſe cut out of their mothers wombs. Pliny ranks this as an auſpicious kind of birth; the elder Scipio Africanus, and the firſt family of Cæſars, were brought into the world in this way.

CÆSTUS, in antiquity, a large gauntlet made of raw hide, which the wreſtlers made uſe of when they fought at the public games.—This was a kind of leathern ſtrap, ſtrengthened with lead or plates of iron, which encompaſſed the hand, the wriſt, and a part of the arm, as well to defend theſe parts as to enforce their blows.

CÆSTUS, or *Cæſtum*, was alſo a kind of girdle, made of wool, which the huſband untied for his ſpouſe the firſt day of marriage, before they went to bed.

This relates to Venus's girdle, which Juno borrowed of her to entice Jupiter to love her. See CESTUS.

CÆSURA, in the ancient poetry, is when, in the ſcanning of a verſe, a word is divided ſo, as one part ſeems cut off, and goes to a different foot from the reſt; as,

Menti|ri no|li, nun|quam men|dacia| proſunt.

where the ſyllables *ri*, *li*, *quam*, and *men*, are cæſuras.

CÆSURA, in the modern poetry, denotes a reſt or pauſe towards the middle of an Alexandrian verſe, by which the voice and pronunciation are aided, and the verſe, as it were, divided into two hemiſtichs. See PAUSE.

CÆTERIS PARIBUS, a Latin term in frequent uſe among mathematical and phyſical writers. The words literally ſignify, *the reſt* (or *other things*) *being alike or equal*. Thus we ſay the heavier the bullet, *cæteris paribus*, the greater the range; i. e. by how much the bullet is heavier, if the length and diameter of the piece and ſtrength of the powder be the ſame, by ſo much will the utmoſt range or diſtance of a piece of ordnance be the greater. Thus alſo, in a phyſical way, we ſay, the velocity and quantity circulating in a given time through any ſection of an artery, will, *cæteris paribus*, be according to its diameter, and nearneſs to or diſtance from the heart.

CÆTOBRIX, in *Ancient Geography*, a town of Luſitania, near the mouth of the Tagus on the eaſt ſide; now extinct. It had its name from its fiſhery; and there are ſtill extant fiſh ponds on the ſhore, done with plaſter of Paris, which illuſtrate the name of the ruined city.

CAFFA, in commerce, painted cotton cloths manufactured in the Eaſt Indies, and ſold at Bengal.

CAFFA, or *Kaffa*, a city and port town of Crim Tartary, ſituated on the ſouth-eaſt part of that peninſula. E. Long. 37. 0. N. Lat. 44. 55.

It is the moſt conſiderable town in the country, and

Caffila || Cage.

gives name to the ſtraits of Caffa, which run from the Euxine or Black ſea, to the Palus Mæotis or ſea of Aſoph.

CAFFILA, a company of merchants or travellers, who join together in order to go with more ſecurity through the dominions of the Great Mogul, and through other countries on the continent of the Eaſt Indies.

The caffila differs from a caravan, at leaſt in Perſia; for the caffila belongs properly to ſome ſovereign, or to ſome powerful company in Europe; whereas a caravan is a company of particular merchants, each trading upon his own account. The Engliſh and Dutch have each of them their caffila at Gambrow. There are alſo ſuch caffilas, which croſs ſome parts of the deſerts of Africa, particularly that called the *ſea of ſand*, which lies between the kingdom of Morocco and thoſe of Tombut and Gaigo. This is a journey of 400 leagues; and takes up two months in going, and as many in coming back; the caffila travelling only by night, on account of the exceſſive heat of that country. The chief merchandiſe they bring back conſiſts in gold duſt, which they call *atibar*, and the Europeans *tibir*.

CAFFILA, on the coaſt of Guzerat or Cambaya, ſignifies a ſmall fleet of merchant ſhips.

CAFFRARIA, the country of the Caffres or Hottentots, in the moſt ſoutherly parts of Africa, lying in the form of a creſcent about the inland country of Monomotapa between 35° ſouth latitude and the tropic of Capricorn: and bounded on the eaſt, ſouth, and weſt, by the Indian and Atlantic oceans. See HOTTENTOTS.

Moſt of the ſea coaſts of this country are ſubject to the Dutch, who have built a fort near the moſt ſouthern promontory called the *Cape of Good Hope*.

CAG, or KEG, a barrel or veſſel that contains from four or five gallons.

CAGANUS, or CACANUS, an appellation anciently given by the Huns to their kings. The word appears alſo to have been formerly applied to the princes of Muſcovy, now called *czar*. From the ſame alſo, probably, the Tartar title *cham* or *can*, had its origin.

CAGE, an encloſure made of wire, wicker, or the like, interwoven lattice-wiſe, for the confinement of birds or wild beaſts. The word is French, *cage*, formed from the Italian *gaggia*, of the Latin *cavea* which ſignifies the ſame: *a caveis theatralibus in quibus includebantur feræ*.

Beaſts were uſually brought to Rome ſhut up in oaken or beechen cages, artfully formed, and covered or ſhaded with boughs, that the creatures deceived with the appearance of a wood, might fancy themſelves in their foreſt. The fiercer ſort were pent in iron cages, leſt wooden priſons might be broke through. In ſome priſons there are iron cages for the cloſer confinement of criminals. The Freneh laws diſtinguiſh two ſorts of birds cages, viz. high or ſinging cages, and low or dumb cages; thoſe who expoſe birds to ſale are obliged to put the hens in the latter, and the cocks in the former, that perſons may not be impoſed on by buying a hen for a cock.

CAGES (*caveæ*), denote alſo places in the ancient amphitheatres, wherein wild beaſts were kept, ready to be let out for ſport. The *caveæ* were a ſort of iron cages different from dens, which were under ground and dark; whereas the *caveæ* being airy and light, the beaſts ruſhed out of them with more alacrity and fierceneſs than if they had been pent under ground.

Cage || Cagliari.

CAGE, in carpentry, ſignifies an outer work of timber, encloſing another within it. In this ſenſe we ſay, *the cage of a wind-mill*. The cage of a ſtaircaſe denotes the wooden ſides or walls which encloſe it.

CAGEAN, or CAGAYAN, a province of the iſland of Luzon, or Manilla, in the Eaſt Indies. It is the largeſt in the iſland, being 80 leagues in length and 40 in breadth. The principal city is called *New Segovia*, and 15 leagues eaſtward from this city lies Cape Bajador. Doubling that cape, and coaſting along 20 leagues from north to ſouth, the province of Cagean ends, and that of Illocos begins. The peaceable Cageans who pay tribute are about 9000; but there are a great many not ſubdued. The whole province is fruitful; the men apply themſelves to agriculture, and are of a martial diſpoſition; and the women apply to ſeveral works in cotton. The mountains afford food for a vaſt number of bees; in conſequence of which wax is ſo plenty, that all the poor burn it inſtead of oil. They make their candles after the following manner: they leave a ſmall hole at each end of a hollow ſtick for the wick to run through, and then, ſtopping the bottom, fill it with wax at the top; when cold, they break the mould and take out the candle. On the mountains there is abundance of braſil, ebony, and other valuable woods. In the woods are ſtore of wild beaſts, as boars; but not ſo good as thoſe of Europe. There are alſo abundance of deer which they kill for their ſkins and horns to ſell to the Chineſe.

CAGLI, an ancient epiſcopal town of Italy, in the duchy of Urbino, ſituated at the foot of the Apennine mountains. E. Long. 14. 12. N. Lat. 43. 30.

CAGLIARI, PAOLO, called *Paulo Veroneſe*, an excellent painter, was born at Verona in the year 1532. Gabriel Cagliari his father was a ſculptor, and Antonio Badile his uncle was his maſter in painting. He was not only eſteemed the beſt of all the Lombard painters, but for his extenſive talents in the art was peculiarly ſtyled *Il pittor felice*, "the happy painter;" and there is ſcarcely a church in Venice where ſome of his performances are not to be ſeen. De Pile ſays, that "his picture of the marriage at Cana, in the church of St George, is to be diſtinguiſhed from his other works, as being not only the triumph of Paul Veroneſe, but almoſt the triumph of painting itſelf." When the ſenate ſent Grimani, procurator of St Mark, to be their ambaſſador at Rome, Paul attended him, but did not ſtay long, having left ſome pieces at Venice unfiniſhed. Philip II. king of Spain, ſent for him to paint the Eſcurial, and made him great offers; but Paul excuſed himſelf from leaving his own country, where his reputation was ſo well eſtabliſhed, that moſt of the princes of Europe ordered their ſeveral ambaſſadors to procure ſomething of his hand at any rate. He was indeed highly eſteemed by all the principal men in his time; and ſo much admired by the great maſters, as well his contemporaries, as thoſe who ſucceeded him, that Titian himſelf uſed to ſay, he was the ornament of his profeſſion. And Guido Reni being aſked which of the maſters his predeceſſors he would

Cagliari || Cajetan.

would chooſe to be, were it in his power, after Raphael and Corregio, named Paul Veroneſe; whom he always called his Paolino. He died of a fever at Venice in 1588, and had a tomb and a ſtatue of braſs erected to his memory in the church of St Sebaſtian. He left great wealth to his two ſons Gabriel and Charles, who lived happily together, and joined in finiſhing ſeveral of their father's imperfect pieces with good ſucceſs.

CAGLIARI, an ancient, large, and rich town, capital of the iſland of Sardinia in the Mediterranean. It is ſeated on the declivity of a hill; is an univerſity, an archbiſhopric, and the reſidence of the viceroy. It has an excellent harbour, and a good trade; but is a place of no great ſtrength. It was taken, with the whole iſland, by the Engliſh in 1708, who transferred it to the emperor Charles VI.; but it was retaken by the Spaniards in 1717, and about two years afterwards ceded to the duke of Savoy in lieu of Sicily, and hence he has the title of *king of Sardinia*. E. Long. 9. 14. N. Lat. 39. 12.

CAGUI, in *Zoology*, a ſynonyme of two ſpecies of monkeys, viz. the jacchus and œdipus. See SIMIA, MAMMALIA *Index*.

CAHORS, a conſiderable town of France, in Querci in Guienne, with a biſhop's ſee and a univerſity. It is ſeated on a peninſula made by the river Lot, and built partly on a craggy rock. The principal ſtreet is very narrow; and terminates in the market place, in which is the town-houſe. The cathedral is a Gothic ſtructure, and has a large ſquare ſteeple. The fortifications are regular, and the town is ſurrounded with thick walls. E. Long. 1. 6. N. Lat. 44. 26.

CAHYS, a dry meaſure for corn, uſed in ſome parts of Spain, particularly at Seville and at Cadiz. It is near a buſhel of our meaſure.

CAJANABURG, the capital of the province of Cajania or Eaſt Bothnia in Sweden, ſituated on the north-eaſt part of the lake Cajania, in E. Long. 27. 0. N. Lat. 63. 50.

CAIAPHAS, high prieſt of the Jews after Simon, condemned Chriſt to death: and was put out of his place by the emperor Vitellius, for which diſgrace he made away with himſelf.

CAJAZZO, a town of the province of Lavoro in the kingdom of Naples, ſituated in E. Long. 15. 0. N. Lat. 41. 15.

CAICOS, the name of ſome American iſlands to the north of St Domingo, lying from W. Long. 112. 10. to 113. 16. N. Lat. 21. 40.

CAJEPUT, an oil brought from the Eaſt Indies, reſembling that of cardamoms. See MELALEUCA.

CAIETA, in *Ancient Geography*, a port and town of Latium, ſo called from Eneas's nurſe; now *Gaeta*, which ſee.

CAJETAN, CARDINAL, was born at Cajeta in the kingdom of Naples in the year 1469. His proper name was *Thomas de Vio;* but he adopted that of *Cajetan* from the place of his nativity. He defended the authority of the pope, which ſuffered greatly at the council of Nice, in a work entitled *Of the power of the Pope;* and for this work he obtained the biſhopric of Cajeta. He was afterwards raiſed to the archiepiſcopal ſee of Palermo, and in 1517 was made a cardinal by Pope Leo X. The year after, he was ſent as legate into Germany, to quiet the commotions raiſed againſt indulgencies by Martin Luther; but Luther, under protection of Frederic elector of Saxony, ſet him at defiance; for though he obeyed the cardinal's ſummons, in repairing to Augſburg, yet he rendered all his proceedings ineffectual. Catejan was employed in ſeveral other negotiations and tranſactions, being as ready at buſineſs as at letters. He died in 1534. He wrote Commentaries upon Ariſtotle's philoſophy, and upon Thomas Aquinas's theology; and made a literal tranſlation of the Old and New Teſtaments.

Caifong. Caille.

CAIFONG, a large, populous, and rich town of Aſia, in China, ſeated in the middle of a large and well cultivated plain. It ſtands in a bottom; and when beſieged by the rebels in 1642, they ordered the dykes of the river Hoang-ho to be cut, which drowned the city, and deſtroyed 300,000 of its inhabitants. E. Long. 113. 27. N. Lat. 35. 0.

CAILLE, NICHOLAS LOUIS DE LA, an eminent mathematician and aſtronomer, was born at a ſmall town in the dioceſe of Rheims in 1713. His father had ſerved in the army, which he quitted, and in his retirement ſtudied mathematics; and amuſed himſelf with mechanic exerciſes, wherein he proved the happy author of ſeveral inventions of conſiderable uſe to the public. Nicholas, almoſt in his infancy, took a fancy to mechanics, which proved of ſignal ſervice to him in his maturer years. He was ſent young to ſchool at Mantes-ſur-Seine, where he diſcovered early tokens of genius. In 1729, he went to Paris; where he ſtudied the claſſics, philoſophy, and mathematics. Afterwards he went to ſtudy divinity at the college de Navarre, propoſing to embrace an eccleſiaſtical life. At the end of three years he was ordained a deacon, and officiated as ſuch in the church of the college de Mazarin ſeveral years; but he never entered into prieſts orders, apprehending that his aſtronomical ſtudies, to which he became moſt aſſiduouſly devoted, might too much interfere with his religious duties. In 1739, he was conjoined with M. de Thury, ſon to M. Caſſini, in verifying the meridian of the royal obſervatory through the whole extent of the kingdom of France. In the month of November the ſame year, whilſt he was engaged day and night in the operations which this grand undertaking required, and at a great diſtance from Paris, he was, without any ſolicitation, elected into the vacant mathematical chair which the celebrated M. Varignon had ſo worthily filled. Here he began to teach about the end of 1740; and an obſervatory was ordered to be erected for his uſe in the college, and furniſhed with a ſuitable apparatus of the beſt inſtruments. In May 1741, M. de la Caille was admitted into the Royal Academy of Sciences as an adjoint member for aſtronomy. Beſides the many excellent papers of his diſperſed up and down in their memoirs, he publiſhed Elements of Geometry, mechanics, optics, and aſtronomy. Moreover, he carefully computed all the eclipſes of the ſun and moon that had happened ſince the Chriſtian era, which were printed in a book publiſhed by two Benedictines, entitled *l' art de verefier les dates*, &c. Paris, 1750, in 4to. Beſides theſe he compiled a volume of aſtronomical ephemerides for the years 1745 to 1755; another for the years 1755 to 1765; a third for the years 1765 to 1775; an excellent work entitled *Aſtronomiæ fundamenta*

Caille. *menta noviſſimis ſolis et ſtellarum obſervationibus ſtabilita*: and the moſt correct ſolar tables that ever appeared. Having gone through a ſeven years ſeries of aſtronomical obſervations in his own obſervatory, he formed a project of going to obſerve the ſouthern ſtars at the Cape of Good Hope. This was highly approved by the academy, and by the prime miniſter Comte de Argenſon, and very readily agreed to by the ſtates of Holland. Upon this he drew up a plan of the method he propoſed to purſue in his ſouthern obſervations; ſetting forth, that, beſides ſettling the places of the fixed ſtars, he propoſed to determine the parallax of the moon, Mars, and Venus. But whereas this required correſpondent obſervations to be made in the northern parts of the world, he ſent to thoſe of his correſpondents who were expert in practical aſtronomy previous notice, in print, what obſervations he deſigned to make at ſuch and ſuch times for the ſaid purpoſe. At length, on the 21ſt of November 1750, he ſailed for the Cape, and arrived there on the 19th of April 1751. He forthwith got his inſtruments on ſhore; and with the aſſiſtance of ſome Dutch artificers, ſet about building an aſtronomical obſervatory, in which his apparatus of inſtruments was properly diſpoſed of as ſoon as it was in a fit condition to receive them.

The ſky at the Cape is generally pure and ſerene, unleſs when a ſouth-eaſt wind blows: But this is often the caſe, and when it is, it is attended with ſome ſtrange and terrible effects. The ſtars look bigger, and ſeem to caper; the moon has an undulating tremor; and the planets have a ſort of beard like comets. Two hundred and twenty-eight nights did our aſtronomer ſurvey the face of the ſouthern heavens: during which ſpace, which is almoſt incredible, he obſerved more than 10,000 ſtars; and whereas the ancients filled the heavens with monſters and old wives tales, the abbé de la Caille choſe rather to adorn them with the inſtruments and machines which modern philoſophy has made uſe of for the conqueſt of nature *. With no leſs ſucceſs did he attend to the parallax of the moon, Mars, Venus, and the ſun. Having thus executed the purpoſe of his voyage, and no preſent opportunity offering for his return, he thought of employing the vacant time in another arduous attempt; no leſs than that of taking the meaſure of the earth, as he had already done that of the heavens. This, indeed, had, through the munificence of the French king, been done before by different ſets of learned men both in Europe and America; ſome determining the quantity of a degree under the equator, and others under the arctic circle: but it had not as yet been decided whether in the ſouthern parallels of latitude the ſame dimenſions obtained as in the northern. His labours were rewarded with the ſatisfaction he wiſhed for; having determined a diſtance of 410,814 feet from a place called *Klip Fontyn* to the Cape, by means of a baſe of 38,802 feet, three times actually meaſured: whence he diſcovered a new ſecret of nature, namely, that the radii of the parallels in ſouth latitude are not the ſame as thoſe of the correſponding parallels in north latitude. About the 23d degree of ſouth latitude he found a degree on the meridian to contain 342,222 Paris feet. He returned to Paris the 27th of September 1754; having in his almoſt four years abſence expended no more than 9144 livres on himſelf and his companion; and at his coming into port, he refuſed a bribe of 100,000 livres, offered by one who thirſted leſs after glory than gain, to be ſharer in his immunity from cuſtomhouſe ſearches. Caille, Caimacan.

* See the Planiſphere in his *Cœlum auſtrale ſtelliferum*.

After receiving the congratulatory viſits of his more intimate friends and the aſtronomers, he firſt of all thought fit to draw up a reply to ſome ſtrictures which Profeſſor Euler had publiſhed relative to the meridian, and then he ſettled the reſults of the compariſon of his own with the obſervations of other aſtronomers for the parallaxes. That of the ſun he fixed at $9\frac{1}{2}''$; of the moon at $56'\ 56''$; of Mars in his oppoſition, $36''$; of Venus, $38''$. He alſo ſettled the laws whereby aſtronomical refractions are varied by the different denſity or rarity of the air, by heat or cold, and dryneſs or moiſture. And, laſtly, He ſhowed an eaſy, and by common navigators practicable, method of finding the longitude at ſea by means of the moon, which he illuſtrated by examples ſelected from his own obſervations during his voyages. His fame being now eſtabliſhed upon ſo firm a baſis, the moſt celebrated academies of Europe claimed him as their own: and he was unanimouſly elected a member of the royal ſociety at London; of the inſtitute of Bologna; of the imperial academy at Peterſburgh; and of the royal academies at Berlin, Stockholm, and Gottingen. In the year 1760, M. de la Caille was attacked with a ſevere fit of the gout; which, however, did not interrupt the courſe of his ſtudies; for he then planned out a new and immenſe work; no leſs than the hiſtory of aſtronomy through all ages, with a compariſon of the ancient and modern obſervations, and the conſtruction and uſe of the inſtruments employed in making them. In order to purſue the taſk he had impoſed upon himſelf in a ſuitable retirement, he obtained a grant of apartments in the royal palace of Vincennes; and whilſt his aſtronomical apparatus was erecting there, he began printing his Catalogue of the Southern Stars, and the third volume of his Ephemerides. The ſtate of his health was, towards the end of the year 1763, greatly reduced. His blood grew inflamed; he had pains of the head, obſtructions of the kidneys, loſs of appetite, with a fullneſs of the whole habit. His mind remained unaffected, and he reſolutely perſiſted in his ſtudies as uſual. In the month of March, medicines were adminiſtered to him, which rather aggravated than alleviated his ſymptoms; and he was now ſenſible, that the ſame diſtemper which in Africa, ten years before, yielded to a few ſimple remedies, did in his native country bid defiance to the beſt phyſicians. This induced him to ſettle his affairs: his manuſcripts he committed to the care and diſcretion of his eſteemed friend M. Maraldi. It was at laſt determined that a vein ſhould be opened; but this brought on an obſtinate lethargy, of which he died, aged 49.

CAIMACAN, or Caimacam, in the Turkiſh affairs, a dignity in the Ottoman empire, anſwering to lieutenant, or rather deputy, amongſt us.

There are uſually two caimacans; one reſiding at Conſtantinople, as governor thereof; the other attending the grand vizir in quality of his lieutenant, ſecretary of ſtate, and firſt miniſter of his council, and gives audience to ambaſſadors. Sometimes there is a third

Cayman Islands. third caimacan, who attends the ſultan; whom he acquaints with any public diſturbances, and receives his orders concerning them.

CAIMAN, or CAYMAN ISLANDS, certain American iſlands lying ſouth of Cuba, and north-weſt of Jamaica, between 81° and 86° of weſt longitude, and in 21° of north latitude. They are moſt remarkable on account of the fiſhery of tortoiſe, which the people of Jamaica catch here and carry home alive, keeping them in pens for food, and killing them as they want them.

CAIN, eldeſt ſon of Adam and Eve, killed his brother Abel; for which he was condemned by God to baniſhment and a vagabond ſtate of life. Cain retired to the land of Nod, on the eaſt of Eden; and built a city, to which he gave the name of his ſon Enoch.

CAINITES, a ſect of heretics in the 2d century, ſo called on account of their great reſpect for Cain. They pretended that the virtue which produced Abel was of an order inferior to that which had produced Cain, and that this was the reaſon why Cain had the victory over Abel and killed him; for they admitted a great number of genii, which they called *virtues*, of different ranks and orders. They made profeſſion of honouring thoſe who carry in Scripture the moſt viſible marks of reprobration; as the inhabitants of Sodom, Eſau, Korah, Dathan, and Abiram. They had, in particular, a very great veneration for the traitor Judas, under pretence that the death of Jeſus Chriſt had ſaved mankind. They had a forged goſpel of Judas, to which they paid great reſpect.

CAIRNS, or CARNES, the vulgar name of thoſe heaps of ſtones which are to be ſeen in many places of Britain, particularly Scotland and Wales.—They are compoſed of ſtones of all dimenſions thrown together in a conical form, a flat ſtone crowning the apex; (ſee Plate CXXXV.

Various cauſes have been aſſigned by the learned for theſe heaps of ſtones. They have ſuppoſed them to have been, in times of inauguration, the places where the chieftan elect ſtood to ſhow himſelf to beſt advantage to the people; or the place from whence judgement was pronounced; or to have been erected on the road-ſide in honour of Mercury; or to have been formed in memory of ſome ſolemn compact, particularly where accompanied by ſtanding pillars of ſtones; or for the celebration of certain religious ceremonies. Such might have been the reaſons, in ſome inſtances, where the evidences of ſtone cheſts and urns are wanting: but theſe are ſo generally found that they ſeem to determine the moſt uſual purpoſe of the piles in queſtion to have been for ſepulchral monuments. Even this deſtination might render them ſuitable to other purpoſes; particularly religious, to which by their nature they might be ſuppoſed to give additional ſolemnity.—According to Toland, fires were kindled on the tops or flat ſtones, at certain times of the year, particularly on the eves of the 1ſt of May and the 1ſt of November, for the purpoſe of ſacrificing; at which time all the people having extinguiſhed their domeſtic hearths rekindled them from the ſacred fires of the cairns. In general, therefore, theſe accumulations appear to have been deſigned for the ſepulchral protection of heroes and great men. The ſtone cheſts, the repoſitory of the urns and aſhes, are lodged in the earth beneath: ſometimes only one, ſometimes more, are found thus depoſited; and Mr Pennant mentions an inſtance of 17 being diſcovered under the ſame pile. Cairns, Cairo.

Cairns are of different ſizes, ſome of them very large. Mr Pennant deſcribes one in the iſland of Arran, 114 feet over, and of a vaſt height. They may juſtly be ſuppoſed to have been proportioned in ſize to the rank of the perſon, or to his popularity: the people of a whole diſtrict aſſembled to ſhow their reſpect to the deceaſed; and, by an active honouring of his memory, ſoon accumulated heaps equal to thoſe that aſtoniſh us at this time. But theſe honours were not merely thoſe of the day; as long as the memory of the deceaſed endured, not a paſſenger went by without adding a ſtone to the heap: they ſuppoſed it would be an honour to the dead, and acceptable to his manes.

Quanquam feſtinas, non eſt mora longa: licebit
Injecto ter pulvera, curras.

To this moment there is a proverbial expreſſion among the Highlanders alluſive to the old practice; a ſuppliant will tell his patron, *Curri mi cloch er do charne*, "I will add a ſtone to your cairn;" meaning, When you are no more, I will do all poſſible honour to your memory.

Cairns are to be found in all parts of our iſlands, in Cornwall, Wales, and all parts of North Britain; they were in uſe among the northern nations; Dahlberg, in his 323d plate, has given the figure of one. In Wales they are called *carneddau*; but the proverb taken from them there, is not of the complimental kind: *Karn ar dy ben*, or, "A cairn on your head," is a token of imprecation.

CAIRO, or GRAND CAIRO, the capital of Egypt, ſituated in a plain at the foot of a mountain, in E. Long. 32. 0. N. Lat. 30. 0. It was founded by Jawhar, a Magrebian general, in the year of the Hegira 358. He had laid the foundation of it under the horoſcope of Mars; and for that reaſon gave his new city the name of *Al Kahira*, or the *Victorious*, an epithet applied by the Arab aſtronomers to that planet. In 362 it became the reſidence of the caliphs of Egypt, and of conſequence the capital of that country, and has ever ſince continued to be ſo. It is divided into the New and Old cities. Old Cairo is on the eaſtern ſide of the river Nile, and is now almoſt uninhabited. The new, which is properly Cairo, is ſeated in a ſandy plain about two miles and a half from the old city. It ſtands on the weſtern ſide of the Nile, from which it is not three quarters of a mile diſtant. It is extended along the mountain on which the caſtle is built, for the ſake of which it was removed hither, in order, as ſome pretend, to be under its protection. However, the change is much for the worſe, as well with regard to air as water, and the pleaſantneſs of the proſpect. Bulack may be called the port of Cairo; for it ſtands on the bank of the Nile, about a mile and a half from it, and all the corn and other commodities are landed there before they are brought to the city. Some travellers have made Cairo of a moſt enormous magnitude, by taking in the old city, Bulack, and the new; the real circumference of it, however, is not above ten miles, but it is extremely populous. The firſt thing that ſtrikes a traveller is the narrowneſs of the ſtreets,

Cairo. ſtreets, and the appearance of the houſes. Theſe are ſo daubed with mud on the outſide, that you would think they were built with nothing elſe. Beſides, as the ſtreets are unpaved, and always full of people, the walking in them is very inconvenient, eſpecially to ſtrangers. To remedy this, there are a great number of aſſes, which always ſtand ready to be hired for a trifle, that is, a penny a mile. The owners drive them along, and give notice to the crowd to make way. And here it may be obſerved, that the Chriſtians in this, as well as other parts of the Turkiſh dominions, are not permitted to ride upon horſes. The number of the inhabitants can only be gueſſed at; but we may conclude it to be very great, becauſe in ſome years the plague will carry off 200,000, without their being much miſſed. The houſes are from one to two or three ſtories high, and flat at the top; where they take the air, and often ſleep all night. The better ſort of theſe have a court on the inſide like a college. The common run of houſes have very little room, and even among great people it is uſual for 20 or 30 to lie in a ſmall hall. Some houſes will hold 300 perſons of both ſexes, among whom are 20 or 30 ſlaves; and thoſe of ordinary rank have generally three or four.

There is a canal called *khalis*, which runs along the city from one end to the other, with houſes on each ſide, which make a large ſtraight ſtreet. Beſides this, there are ſeveral lakes, which are called *birks* in the language of the country. The principal of theſe, which is near the caſtle, is 500 paces in diameter. The moſt elegant houſes in the city are built on its banks; but what is extraordinary, eight months in the year it contains water, and the other four it appears with a charming verdure. When there is water ſufficient, it is always full of gilded boats, barges, and barks, in which people of condition take their pleaſure towards night, at which time there are curious fireworks, and variety of muſic.

New Cairo is ſurrounded with walls built with ſtone, on which are handſome battlements, and at the diſtance of every hundred paces there are very fine towers, which have room for a great number of people. The walls were never very high, and are in many places gone to ruin. The baſha lives in the caſtle, which was built by Saladine 700 years ago. It ſtands in the middle of the famous mountain Moketan, which terminates in this place, after it had accompanied the Nile from Ethiopia hither. This caſtle is the only place of defence in Egypt; and yet the Turks take no notice of its falling, inſomuch that in proceſs of time it will become a heap of rubbiſh. The principal part in it is a magnificent hall, environed with 12 columns of granite, of a prodigious height and thickneſs, which ſuſtain an open dome, under which Saladine diſtributed juſtice to his ſubjects. Round this dome there is an inſcription in relievo, which determines the date and by whom it was built. From this place the whole city of Cairo may be ſeen, and above 30 miles along the Nile, with the fruitful plains that lie near it, as well as the moſques, pyramids, villages, and gardens, with which theſe fields are covered. Theſe granite pillars were the work of antiquity, for they were got out of the ruins of Alexandria. There are likewiſe in the moſques and in the principal houſes no leſs than 40,000 more, beſides great magazines, where all Cairo. kinds are to be had at very low rates. A janizary happened to find five in his garden, as large as thoſe in the caſtle; but could not find any machine of ſtrength ſufficient to move them, and therefore had them ſawed in pieces to make millſtones. It is believed that there have been 30 or 40,000 of theſe pillars brought from Alexandria, where there are yet many more to be had. The gates of Cairo are three, which are very fine and magnificent.

There are about 300 public moſques in this city, ſome of which have ſix minarets. The moſque of Aſher hath ſeveral buildings adjoining, which were once a famous univerſity, and 14,000 ſcholars and ſtudents were maintained on the foundation; but it has now not above 1400, and thoſe are only taught to read and write. All the moſques are built upon the ſame plan, and differ only in magnitude. The entrance is through the principal gate into a large ſquare, open on the top, but well paved. Round this are covered galleries, ſupported by pillars; under which they ſay their prayers, in the ſhade. On one ſide of the ſquare there are particular places with baſons of water for the conveniency of performing the ablutions enjoined by the Koran. The moſt remarkable part of the moſque, beſides the minaret, is the dome. This is often bold, well proportioned, and of an aſtoniſhing magnitude. The inſide ſtones are carved like lace, flowers, and melons. They are built ſo firm, and with ſuch art, that they will laſt 600 or 700 years. About the outward circumference there are large Arabic inſcriptions in relievo, which may be read by thoſe who ſtand below, though they are ſometimes of a wonderful height.

The khanes or caravanſeras are numerous and large, with a court in the middle, like their houſes. Some are ſeveral ſtories high, and are always full of people and merchandiſe. The Nubians, the Abyſſinians, and other African nations, which come to Cairo, have one to themſelves, where they always meet with lodging. Here they are ſecure from inſults, and their effects are all ſafe. Beſides theſe there is a bazar, or market, where all ſorts of goods are to be ſold. This is in a long broad ſtreet; and yet the crowd is ſo great, you can hardly paſs along. At the end of this ſtreet is another ſhort one, but pretty broad, with ſhops full of the beſt ſort of goods and precious merchandiſe. At the end of this ſhort ſtreet there is a great khane, where all ſorts of white ſlaves are to be ſold. Farther than this is another khane, where a great number of blacks, of both ſexes, are expoſed to ſale. Not far from the beſt market place is a moſque, and an hoſpital for mad people. They alſo receive and maintain ſick people in this hoſpital, but they are poorly looked after.

Old Cairo has ſcarce any thing remarkable but the granaries of Joſeph; which are nothing but a high wall, lately built, which includes a ſquare ſpot of ground where they depoſite wheat, barley, and other grain, which is a tribute to the baſha, paid by the owners of land. This has no other covering but the heavens, and therefore the birds are always ſure to have their ſhare. There is likewiſe a tolerably handſome church, which is made uſe of by the Copts, who are Chriſtians and the original inhabitants of Egypt.

Joſeph's

Cairo
||
Caiſſon.

Joſeph's well is in the caſtle, and was made by King Mohammed about 700 years ago. It is called *Joſeph's well*, becauſe they attribute every thing extraordinary to that remarkable perſon. It is cut in a rock, and is 280 feet in depth. The water is drawn up to the top by means of oxen, placed on platforms, at proper diſtances, which turn about the machines that raiſe it. The deſcent is ſo ſloping, that, though there are no ſteps, the oxen can deſcend and aſcend with eaſe.

The river Nile, to which not only Cairo, but all Egypt is ſo much indebted, is now known to have its riſe in Abyſſinia. The increaſe of the Nile generally begins in May, and in June they commonly proclaim about the city how much it is riſen. Over againſt old Cairo the baſha has a houſe, wherein the water enters to a column, which has lines at the diſtance of every inch, and marks at every two feet as far as 30. When the water riſes to 22 feet, it is thought to be of a ſufficient height; when it riſes much higher, it does a great deal of miſchief. There is much pomp and ceremony uſed in letting the water into the canal above mentioned. See EGYPT.

The inhabitants of Cairo are a mixture of Moors, Turks, Jews, Greeks, and Copts or Coptis. The only difference between the habit of the Moors and Coptis is their turbans; thoſe of the Moors being white, and of the Coptis white ſtriped with blue. The common people generally wear a long black looſe frock, ſewed together all down before. The Jews wear a frock of the ſame faſhion, made of cloth; and their caps are like a high-crowned hat, without brims, covered with the ſame cloth, but not ſo taper. The Jewiſh women's are not very unlike the men's, but more light and long. The Greeks are habited like the Turks, only their turbans differ.

Proviſions of all kinds are exceedingly plenty; for 20 eggs may be bought for a parah or penny, and bread is ſix times as cheap as with us. They have almoſt all ſorts of fleſh and fiſh; and in particular have tame buffaloes, which are very uſeful. They bring goats into the ſtreets in great numbers, to ſell their milk. Their gardens are well ſtocked with fruit trees of various kinds, as well as roots, herbs, melons, and cucumbers. The moſt common fleſh meat is mutton. The goats are very beautiful, and have ears two feet in length; but their fleſh is in no great eſteem. See further the article EGYPT.

CAIROAN, or CAIRWAN, a city of Africa, in the kingdom of Tunis, ſeated in a ſandy barren ſoil, about five miles from the gulf of Capes. It has neither ſpring, well, nor river; for which reaſon they are obliged to preſerve rain water in tanks and ciſterns. It was built by the Aglabites; and is the ancient Cyrene *, but hath now loſt its ſplendour. There is ſtill, however, a very ſuperb moſque, and the tombs of the kings of Tunis are yet to be ſeen, E. Long. 9. 12. N. Lat. 35. 40.

* See *Barbary*.

CAISSON, in the military art, a wooden cheſt, into which ſeveral bombs are put, and ſometimes filled only with gun-powder: this is buried under ſome work whereof the enemy intend to poſſeſs themſelves, and, when they are maſters of it, is fired, in order to blow them up.

CAISSON is alſo uſed for a wooden frame or cheſt uſed in laying the foundations of the piers of a bridge.

Caithneſs.

CAITHNESS, otherwiſe called the *ſhire of Wick*, is the moſt northern county of all Scotland; bounded on the eaſt by the ocean, and by Strathnaver and Sutherland on the ſouth and ſouth-weſt: from theſe it is divided by the mountain of Orde, and a continued ridge of hills as far as Knockfin, then by the whole courſe of the river Hallowdale. On the north it is waſhed by the Pentland or Pictland frith, which flows between this county and the Orkneys. It extends 35 miles from north to ſouth, and about 20 from eaſt to weſt. The coaſt is rocky, and remarkable for a number of bays and promontories. Of theſe, the principal are Sandſide-head to the weſt, pointing to the opening of Pentland frith; Orcas, now Holborn-head, and Dunnet-head, both pointing northward to the frith. Dunnet-head is a peninſula about a mile broad, and ſeven in compaſs; affording ſeveral lakes, good paſture, excellent mill-ſtones, and a lead mine. Scribiſter bay, on the north-weſt is a good harbour, where ſhips may ride ſecurely. Rice-bay, on the eaſt ſide, extends three miles in breadth; but is of dangerous acceſs, on account of ſome ſunk rocks at the entrance. At the bottom of this bay appear the ruins of two ſtrong caſtles, the ſeat of the earl of Caithneſs, called *Caſtle Sinclair*, and Gernego, joined to each other by a draw-bridge. Duncan's bay, otherwiſe called *Dunſby-head*, is the north-eaſt point of Caithneſs, and the extremeſt promontory in Britain. At this place, the breadth of the frith does not exceed 12 miles, and in the neighbourhood is the ordinary ferry to the Orkneys. Here is likewiſe Clytheneſs pointing eaſt, and Noſhead pointing north-eaſt. The ſea in this place is very impetuous, being in continual agitation from violent counter tides, currents, and vortices. The only iſland belonging to this county is that of Stroma, in the Pentland frith, at the diſtance of two miles from the main land, extending about a mile in length, and producing good corn. The navigation is here rendered very difficult by conflicting tides and currents, which at both ends of the iſland produce a great agitation in the ſea. At the ſouth end, the waves dance ſo impetuouſly, that the ſailors term them the *merry men of May*, from the name of a gentleman's ſeat on the oppoſite ſhore of Caithneſs, which ſerved them as a land mark, in the dangerous paſſage between the iſland and the continent. The property of this iſland was once diſputed between the earls of Orkney and Caithneſs; but adjudged to the latter, in conſequence of an experiment, by which it appeared, that venomous creatures will live in Stroma, whereas they die immediately if tranſported to the Orkneys. The county of Caithneſs, though chiefly mountainous, flattens, towards the ſea coaſt, where the ground is arable, and produces good harveſts of oats and barley, ſufficient for the natives, and yielding a ſurplus for exportation. Caithneſs is well watered with ſmall rivers, brooks, lakes, and fountains, and affords a few woods of birch, but is in general bare of trees; and even thoſe the inhabitants plant are ſtunted in their growth. Lead is found at Dunnet, copper at Old Urk, and iron ore at ſeveral places; but theſe advantages are not improved. The air of Caithneſs is temperate, though in the latitude of 58°, where the longeſt day in ſummer is computed at 18 hours; and when the ſun ſets, he makes

ſo

Caithneſs. ſo ſmall an arch of a circle below the horizon, that the people enjoy a twilight until he riſes again. The fuel uſed by the inhabitants of Caithneſs conſiſts of peat and turf, which the ground yields in great plenty. The foreſts of Morravins and Berridale afford abundance of red deer and roe-bucks; the county is well ſtored with hares, rabbits, growſe, heathcocks, plover, and all ſorts of game, comprehending a bird called *ſnow-fleet*, about the ſize of a ſparrow, exceedingly fat and delicious, that comes hither in large flights about the middle of February, and takes its departure in April. The hills are covered with ſheep and black cattle; ſo numerous, that a fat cow has been ſold at market for 4s. ſterling. The rocks along the coaſts are frequented by eagles, hawks, and all manner of ſea fowl, whoſe eggs and young are taken in vaſt quantities by the natives. The rivers and lakes abound with trout, ſalmon, and eels; and the ſea affords a very advantageous fiſhery. Divers obeliſks and ancient monuments appear in this diſtrict, and ſeveral Romiſh chapels are ſtill ſtanding. Caithneſs is well peopled with a race of hardy inhabitants, who employ themſelves chiefly in fiſhing, and breeding ſheep and black cattle: they are even remarkably induſtrious; for between Wick and Dunbeath, one continued tract of rugged rocks, extending 12 miles, they have forced ſeveral little harbours for their fiſhing boats, and cut artificial ſteps from the beach to the top of the rocks, where they have erected houſes, in which they cure and dry the fiſh for market.

According to Mr Pennant, this county is ſuppoſed to ſend out in ſome years about 20,000 head of black cattle, but in bad ſeaſons the farmer kills and ſalts great numbers for ſale. Great numbers of ſwine are alſo reared here. Theſe are ſhort, high backed, long briſtled, ſharp, ſlender, and long noſed; have long erect ears and moſt ſavage looks. Here are neither barns nor granaries: the corn is threſhed out, and preſerved in the chaff in byks; which are ſtacks, in the ſhape of bee hives, thatched quite round, where it will keep good for two years. Vaſt numbers of ſalmon are taken at Caſtle-hill, Dunnet, Wick, and Thurſo. A miraculous draught at this laſt place is ſtill talked of, not leſs than 2500 being taken at one tide within the memory of man; and Mr Smollet informs us, that, in the neighbourhood, above 300 good ſalmon have been taken at one draught of the net. In the month of November, great numbers of ſeals are taken in the caverns that open into the ſea, and run ſome hundreds of yards under ground. The entrance of theſe caverns is narrow, but the inſide lofty and ſpacious. The ſeal hunters enter theſe in ſmall boats with torches, which they light as ſoon as they land, and then with loud ſhouts alarm the animals, which they kill with clubs as they attempt to paſs. This is a hazardous employment; for ſhould the wind blow hard from ſea, theſe adventurers are inevitably loſt. Sometimes a large ſpecies of ſeals, 12 feet long, have been killed on this coaſt; and it is ſaid the ſame kind are found on the rock Hiſkir, one of the Weſtern iſlands. During the ſpring, great quantities of lump fiſh reſort to this coaſt, and are the prey of the ſeals, as appears from the number of ſkins of thoſe fiſhes which at that ſeaſon float aſhore. At certain times alſo the ſeals ſeem to be viſited by a great mortality; for, at thoſe times, multitudes of them are ſeen dead in the water. Much limeſtone is found in this county, which when burnt is made into a compoſt with turf and ſea plants. Caithneſs.

The diſcovery of coal has long been an object of great importance in this part of Scotland. In the years 1801 and 1802 ſome attempts were made for this purpoſe at the expence of government. But although the buſineſs was conducted by perſons well ſkilled in ſuch matters, and long perſevered in, it has entirely failed, which leaves little hope of future ſucceſs.

The following is the population of the county of Caithneſs according to the pariſhes, taken at two different periods, namely in 1755 and in 1798, and extracted from the Statiſtical Hiſtory of Scotland.

Pariſh.	Population in 1755.	Population in 1790—1798.
Bower	1287	1592
Caniſbay	1481	1950
Dunnet	1235	1399
Halkirk	3075	3180
Latheron	3675	4006
Olrick	875	1001
Reay	2262	2298
Thurſo	2963	3146
Wattin	1424	1230
Wick	3938	5000
	22,215	24,802
		22,215
		2,587

CAIUS, Kaye, or *Keye*, Dr John, the founder of Caius college in Cambridge, was born at Norwich in 1510. He was admitted very young a ſtudent in Gonville hall in the above-mentioned univerſity; and at the age of 21 tranſlated from Greek into Latin ſome pieces of divinity, and into Engliſh Eraſmus's paraphraſe on Jude, &c. From theſe his juvenile labours, it ſeems probable that he firſt intended to proſecute the ſtudy of divinity. Be that as it may, he travelled to Italy, and at Padua ſtudied phyſic under the celebrated Montanus. In that univerſity he continued ſome time, where we are told he read Greek lectures with great applauſe. In 1543, he travelled through part of Italy, Germany, and France; and returning to England commenced doctor of phyſic at Cambridge. He practiſed firſt at Shrewſbury, and afterwards at Norwich; but removing to London, in 1547, he was admitted fellow of the college of phyſicians, to which he was ſeveral years preſident. In 1557, being then phyſician to Queen Mary, and in great favour, he obtained a licenſe to advance Gonville-hall, where he had been educated, into a college; which he endowed with ſeveral conſiderable eſtates, adding an entire new ſquare at the expence of 1834l. Of this college he accepted the maſterſhip, which he kept till within a ſhort time of his death. He was phyſician to Edward VI. Queen Mary, and Queen Elizabeth. Towards the latter end of his life he retired to his own college at Cambridge; where, having reſigned the maſterſhip to Dr Legge of Norwich, he ſpent the remainder of his life as a fellow commoner. He died in July 1573, aged 63; and was buried in the chapel of his own college. Dr Caius was

Cake ‖ Calabaſh.

a learned, active, benevolent man. In 1557, he erected a monument in St Paul's to the memory of the famous Linacre. In 1563, he obtained a grant for the college of phyſicians to take the bodies of two malefactors annually for diſſection; and he was the inventor of the *inſignia* which diſtinguiſh the preſident from the reſt of the fellows. He wrote, 1. Annals of the college from 1555 to 1572. 2. Tranſlation of ſeveral of Galen's works. Printed at different times abroad. 3. *Hippocrates de Medicamentis;* firſt diſcovered and publiſhed by our author: alſo *De ratione victus*, Lov. 1556, 8vo. 4. *De Medendi Methodo.* Baſil, 1554. Lond. 1556, 8vo. 5. Account of the ſweating ſickneſs in England. Lond. 1556, 1721. It is entitled *De ephemera Britannica.* 6. Hiſtory of the univerſity of Cambridge. Lond. 1568, 8vo, 1574, 4to, in Latin. 7. *De thermis Britannicis.* Doubtful whether ever printed. 8. Of ſome rare plants and animals. Lond. 1570. 9. *De canibus Britannicis*, 1570, 1729. 10. *De pronunciatione Græcæ et Latinæ Linguæ.* Lond. 1574. 11. *De libris propriis.* Lond. 1570. Beſides many other works which never were printed.

CAKE, a finer ſort of bread, denominated from its flat round figure.

We meet with different compoſitions under the name of *cakes;* as *ſeed-cakes*, made of flour, butter, cream, ſugar, coriander, and caraway ſeeds, mace, and other ſpices and perfumes, baked in the oven; *plum-cake*, made much after the ſame manner, only with fewer ſeeds, and the addition of currants: *pan-cakes*, made of a mixture of flour, eggs, &c. fried; *cheeſe-cakes*, made of cream, eggs, and flour, with or without cheeſe-curd, butter, almonds, &c.; *oat-cakes*, made of fine oaten flour, mixed with yeſt and ſometimes without, rolled thin, and laid on an iron or ſtone to bake over a ſlow fire; *ſugar-cakes*, made of fine ſugar beaten and ſearced with the fineſt flour, adding butter, roſe-water, and ſpices; *roſe-cakes*, (*placentæ roſaceæ*,) are leaves of roſes dried and preſſed into a maſs, ſold in the ſhops for epithems.

The Hebrews had ſeveral ſorts of cakes, which they offered in the temple. They were made of the meal either of wheat or barley; they were kneaded ſometimes with oil and ſometimes with honey. Sometimes they only rubbed them over with oil when they were baked, or fried them with oil in a frying pan upon the fire. In the ceremony of Aaron's conſecration, they ſacrificed a calf and two rams, and offered unleavened bread, and cakes unleavened, tempered with oil, and wafers unleavened, anointed with oil; the whole made of fine wheaten flour. Ez. xxix. 1, 2.

CAKET, a town of Aſia, in Perſia, in the province of Curdiſtan near Mount Caucaſus. Its trade conſiſts chiefly in ſilks. E. Long. 46. 15. N. Lat. 43. 32.

CALABASH, in commerce, a light kind of veſſel formed of the ſhell of a gourd, emptied and dried, ſerving to put divers kinds of goods in, as pitch, roſin, and the like. The word is Spaniſh, *Calabacca*, which ſignifies the ſame. The Indians alſo, both of the North and South ſea, put the pearls they have fiſhed in calabaſhes, and the negroes on the coaſt of Africa do the ſame by their gold duſt. The ſmaller calabaſhes are alſo frequently uſed by theſe people as a meaſure, by which they ſell theſe precious commodities to the Europeans. The ſame veſſels likewiſe ſerve for putting liquors in; and do the office of cups, as well as bottles, for ſoldiers, pilgrims, &c. Calabaſh, Calabria.

Calabash-Tree. See Crescentia, Botany *Index.*

African Calabash-Tree. See Adansonia, Botany *Index.*

CALABRIA, a country of Italy, in the kingdom of Naples, divided into Calabria Ultra, and Calabria Citra, commonly called *Ulterior* and *Citerior*, or Farther and Hither Calabria. Calabria Citerior is one of the 12 provinces of the kingdom of Naples; and bounded on the ſouth by Calabria Ultra, on the north by Baſilicata, and on the weſt and eaſt by the ſea: Coſenſa is the capital. Calabria Ultra is waſhed by the Mediterranean ſea on the eaſt, ſouth, and weſt, and bounded by Calabria Citra on the north. Reggio is the capital town.

This country has been almoſt entirely deſolated by the earthquakes of 1783. The reiterated ſhocks extended from Cape Spartivento to Amantea above the gulf of St Eufemia, and alſo affected that part of Sicily which lies oppoſite to the ſouthern extremity of Italy. Thoſe of the 5th and 7th of February, and of the 28th of March, were the moſt violent, and completed the deſtruction of every building throughout the abovementioned ſpace. Not one ſtone was left upon another ſouth of the narrow iſthmus of Squillace: and what is more diſaſtrous, a very large proportion of the inhabitants was killed by the falling of their houſes, near 40,000 lives being loſt. Some perſons were dug out alive after remaining a ſurpriſing length of time buried among the rubbiſh. Meſſina became a maſs of ruins; its beautiful palazzata was thrown in upon the town, and its quay cracked into ditches full of water. Reggio was almoſt deſtroyed; Tropea greatly damaged; and every other place in the province levelled to the ground.

Before and during the concuſſion the clouds gathered, and then hung immoveable and heavy over the earth. At Palmi the atmoſphere wore ſo fiery an aſpect, that many people thought part of the town was burning. It was afterwards remembered that an unuſual heat had affected the ſkins of ſeveral perſons juſt before the ſhock; the rivers aſſumed a muddy aſh-coloured tinge, and a ſulphureous ſmell was almoſt general. A frigate paſſing between Calabria and Lipari felt ſo ſevere a ſhock, that the ſteerſman was thrown from the helm, and the cannons were raiſed upon their carriages, while all around the ſea exhaled a ſtrong ſmell of brimſtone.

Stupendous alterations were occaſioned in the face of the country; rivers choked up by the falling in of the hills, were converted into lakes, which if not ſpeedily drained by ſome future convulſion, or opened by human labour, will fill the air with peſtilential vapours, and deſtroy the remnants of population. Whole acres of ground, with houſes and trees upon them, were broken off from the plains, and waſhed many furlongs down the deep hollows which the courſe of the rivers had worn; there, to the aſtoniſhment and terror of beholders, they found a new foundation to fix upon, either in an upright or an inclining poſition. In ſhort, every ſpecies of phenomenon, incident to theſe deſtructive commotions of the earth, was to be ſeen in its utmoſt extent and variety in this deſolated country. Their Sicilian majeſties, with the utmoſt expedition, de-

Calade || Calais.

ſpatched veſſels loaded with every thing that could be thought of on the occaſion for the relief and accommodation of the diſtreſſed Calabrians; a general officer went from Naples with engineers and troops to direct the operations of the perſons employed in clearing away and rebuilding the houſes, and to defend the property of the ſufferers. The king ordered this officer to take all the money the royal treaſures could ſupply or borrow; for, rather than it ſhould be wanting on this preſſing call, he was determined to part with his plate, nay the very furniture of his palace. A meſſenger ſent off from a town near Reggio, on the 8th of February, travelled four days without ſhelter, and without being able to procure a morſel of bread; he ſupported nature with a piece of cheeſe which he had brought in his pocket, and the vegetables he was lucky enough to find near the road. To add to all their other ſufferings, the Calabrians found themſelves and the miſerable wreck of their fortunes expoſed to the depredations of robbers and pirates. Villains landed from boats and plundered ſeveral places, and thieves went even from Naples in ſearch of booty: In order to ſtrike a greater terror, they dreſſed themſelves like Algerines; but were diſcovered and driven off. To this accumulated diſtreſs ſucceeded a moſt inclement ſeaſon, which obſtructed every effort made to alleviate it; and almoſt daily earthquakes kept the inhabitants in continual dread, not of being deſtroyed by the fall of houſes, for none were left, but of being ſwallowed up by the ſplitting of the earth, or buried in the waves by ſome ſudden inundation.

For further particulars concerning this dreadful cataſtrophe, and the phenomena attending it, ſee EARTHQUAKE.

CALADE, in the manege, the deſcent or ſloping declivity of a riſing manege ground, being a ſmall eminence upon which we ride down a horſe ſeveral times, putting him to a ſhort gallop, with his fore hams in the air, to learn him to ply or bend his haunches, and form his ſtop upon the aides of the calves of the legs, the ſtay of the bridle, and the caveſon ſeaſonably given.

CALAGORINA, or CALAGURIS, diſtinguiſhed by the ſurname *Naſica*, in *Ancient Geography*, a city of the Vaſcones in the Hither Spain: now *Calahorra*.

CALAHORRA, an epiſcopal town of Spain, in Old Caſtile, ſeated on a fertile ſoil, on the ſide of a hill which extends to the banks of the river Ebro. W. Long. 2. 7. N. Lat. 42. 12.

CALAIS, a ſtrong town of France, in Lower Picardy, now called the department of the ſtraits of Calais, which has a citadel and a fortified harbour. It is built in the form of a triangle, one ſide of which is towards the ſea. The citadel is as large as the town, and has but one entrance. It is a trading place, with handſome ſtreets, and ſeveral churches and monaſteries; the number of inhabitants is reckoned to be 4000.

Calais was taken by Edward III. in 1347. Hither he marched his victorious army from Creſſy, and inveſted the town on the 8th of September. But finding that it could not be taken by force without the deſtruction of great multitudes of his men, he turned the ſiege into a blockade; and having made ſtrong intrenchments to ſecure his army from the enemy, huts to protect them from the inclemency of the weather, and ſtationed a fleet before the harbour to prevent the introduction of proviſions, he reſolved to wait with patience till the place fell into his hands by famine. The beſieged, diſcovering his intention, turned ſeventeen hundred women, children, and old people, out of the town, to ſave their proviſions; and Edward had the goodneſs, after entertaining them with a dinner, and giving them two-pence a piece, to ſuffer them to paſs. The garriſon and inhabitants of Calais having at length conſumed all their proviſions, and even eaten all the horſes, dogs, cats, and vermine in the place, the governor John de Vienne appeared upon the walls, and offered to capitulate. Edward greatly incenſed at their obſtinate reſiſtance, which had detained him eleven months under their walls, at an immenſe expence both of men and money, ſent Sir Walter Mauny, an illuſtrious knight, to acquaint the governor that he would grant them no terms; but that they muſt ſurrender at diſcretion. At length, however, at the ſpirited remonſtrances of the governor, and the perſuaſions of Sir Walter Mauny, Edward conſented to grant their lives to all the garriſon and inhabitants, except ſix of the principal burgeſſes, who ſhould deliver to him the keys of the city, with ropes about their necks. When theſe terms were made known to the people of Calais, they were plunged into the deepeſt diſtreſs; and after all the miſeries they had ſuffered, they could not think without horror of giving up ſix of their fellow citizens to certain death. In this extremity, when the whole people were drowned in tears, and uncertain what to do, Euſtace de St Pierre, one of the richeſt merchants in the place, ſtepped forth, and voluntarily offered himſelf to be one of theſe ſix devoted victims. His noble example was ſoon imitated by other five of the moſt wealthy citizens. Theſe true patriots, barefooted, and bareheaded, with ropes about their necks, were attended to the gates by the whole inhabitants, with tears, bleſſings, and prayers for their ſafety. When they were brought into Edward's preſence, they laid the keys of the city at his feet, and falling on their knees implored his mercy in ſuch moving ſtrains, that all the noble ſpectators melted into tears. The king's reſentment was ſo ſtrong for the many toils and loſſes he had ſuffered in this tedious ſiege, that he was in ſome danger of forgetting his uſual humanity; when the queen, falling upon her knees before him, earneſtly begged and obtained their lives. This great and good princeſs conducted theſe virtuous citizens, whoſe lives ſhe had ſaved, to her own apartment, entertained them honourably, and diſmiſſed them with preſents. Edward took poſſeſſion of Calais Auguſt 4th; and in order to ſecure a conqueſt of ſo great importance, and which had coſt him ſo dear, he found it neceſſary to turn out all the ancient inhabitants, who had diſcovered ſo ſtrong an attachment to their native prince, and to people it with Engliſh.

Calais remained in ſubjection to England till the reign of Queen Mary, when it was retaken by the duke of Guiſe. This general began the enterpriſe by ordering the privateers of Normandy and Bretagne to cruiſe in the Channel, more eſpecially in the very ſtraits of Calais: he then detached the duke of Nevers with

Calais.

Calais. a conſiderable army towards the country of Luxemburg; a motion which drew the attention of the Spaniards that way: when all things were ready, he procured an application from the people of Boulogne, for a body of troops to ſecure them againſt the incurſions of the Spaniards; he ſent a ſtrong detachment at their requeſt, which was followed by another, under colour of ſupporting them; then repaired thither in perſon, ſecure that his officers would follow his inſtructions: and thus, on the firſt day of the new year, 1557, Calais was inveſted. He immediately attacked Fort St Agatha, which the garriſon quitted, and retired into the fort of Nicolai, which, together with the Riſbank, the beſiegers attacked at the ſame time, granted good terms to the officer who commanded in the former, but obliged the garriſon of the latter to ſurrender priſoners of war. By theſe means he opened a communication with the ſea; and having received from on board the ſhips an immenſe quantity of hurdles, his infantry, by the help of them, paſſed the moraſſes that lie round the town. He then made a falſe attack at the water-gate, which drew the attention of the garriſon, who fatigued themſelves exceedingly in making intrenchments behind the breach; but when they had finiſhed their work, he began to fire upon the caſtle, where the walls were very old, and had been neglected on account of the breadth of the ditch, which was alſo very deep when the tide was in; but a great breach being made, the duke cauſed it to be attacked in the night, and during the ebb, the ſoldiers paſſing almoſt up to the ſhoulders. The place was eaſily carried, though the governor made three vigorous attacks before the break of day, in order to diſlodge them; but the French, though they loſt a conſiderable number of men, kept their poſts. The governor then ſaw that it was impracticable to defend the place any longer, and therefore made the beſt terms for himſelf that he could obtain, which, however, were not very good: and thus in eight days the duke of Guiſe recovered a fortreſs which coſt the victorious Edward III. a whole year's ſiege, and which had been now 210 years in the poſſeſſion of the Engliſh, without ſo much as a ſingle attempt to retake it. There are very different accounts given of this matter. Some Engliſh hiſtorians ſay, that King Philip penetrated the deſign of the French upon this fortreſs, gave notice of it in England, and offered to take the defence of it upon himſelf; but that this, out of jealouſy, was refuſed, it being believed to be only an artifice to get a place of ſuch conſequence into his own hands. The truth of the matter ſeems to be this: The ſtrength of Calais conſiſted in its ſituation and outworks, which required a very numerous garriſon; but this being attended with a very large expence, the beſt part of the troops had been ſent to join Philip's army, ſo that the governor had not above 500 men, and there were no more than 250 of the townſmen able to bear arms. As to ammunition, artillery, and proviſions, the French found there abundance: but with ſo ſlender a garriſon, it was impoſſible to make a better defence; and therefore when the Lord Wentworth, who was governor, and whom the French call Lord Dumfort, was tried by his peers for the loſs of this place, he was acquitted. The duke obliged all the Engliſh inhabitants to quit Calais; and beſtowed the government of it upon Des Termes, who was ſoon after made a marſhal of France.

Calais || Calamine.

The fortifications of Calais are good; but its greateſt ſtrength is its ſituation among the marſhes, which may be overflowed at the approach of an enemy. The harbour is not ſo good as formerly, nor will it admit veſſels of any great burden. In times of peace, there are packet boats going backward and forward twice a week from Dover to Calais, which is 21 miles diſtant. E. Long. 2. 6. N. Lat. 50. 58.

Calais *and Zetes*, in fabulous hiſtory, ſons of Boreas and Orythia, to whom the poets attributed wings: they went on the voyage to Colchis with the Argonauts; delivered Phineus from the harpies; and were ſlain by Hercules.

CALAMANCO, a ſort of woolen ſtuff manufactured in England and Brabant. It has a fine gloſs; and is checkered in the warp, whence the checks appear only on the right ſide. Some calamancoes are quite plain, others have broad ſtripes adorned with flowers, ſome with plain broad ſtripes, ſome with narrow ſtripes, and others watered.

CALAMARIÆ, in *Botany*, an order of plants in the *Fragmenta methodi naturalis* of Linnæus; in which he has the following genera, viz. bobartia, ſcirpus, cyperus, eriophorum, carex, ſchœnus, flagellaria, juncus. See Botany.

CALAMATA, a conſiderable town of Turkey in Europe, in the Morea, and province of Belvedera. It was taken by the Venetians in 1685; but the Turks retook it afterwards with all the Morea. It ſtands on the river Spinarza, eight miles from the ſea. E. Long. 22. 15. N. Lat. 37. 8.

CALAMINE, Calamy, *Lapis Calaminaris*, or *Cadmia Foſſilis*, a ſort of ſtone or mineral containing zinc, iron, and ſometimes other ſubſtances. It is conſiderably heavy; moderately hard and brittle, or of a conſiſtence betwixt ſtone and earth: the colour ſometimes whitiſh or gray; ſometimes yellowiſh, or of a deep yellow; ſometimes red; ſometimes brown or blackiſh. It is plentiful in ſeveral places of Europe, as Hungary, Tranſylvania, Poland, Spain, Sweden, Bohemia, Saxony, Goſlar, France, and England, particularly in Derbyſhire, Glouceſterſhire, Nottinghamſhire, and Somerſetſhire, as alſo in Wales. The calamine of England, however, is by the beſt judges allowed to be ſuperior in quality to that of moſt other countries. It ſeldom lies very deep, being chiefly found in clayey grounds near the ſurface. In ſome places it is mixed with lead ores. It is a true ore of zinc, and is uſed as an ingredient in making of braſs.—Newman relates various experiments with this mineral, the only reſult of which was to ſhow that it contained iron as well as zinc. The moſt remarkable are the following: A ſaturated ſolution of calamine in the marine acid, concentrated by evaporating part of the liquor, exhibits in the cold an appearance of fine cryſtals, which on the application of warmth diſſolve and diſappear. A little of this concentrated ſolution tinges a large quantity of water of a bright yellow colour; and at the ſame time depoſites by degrees a fine, ſpongy, browniſh precipitate. Blue diſſolved in this ſolution, and afterwards inſpiſſated, forms an extremely ſlippery tenacious maſs, which does not become dry, and, were it not too expenſive, might be of uſe for entangling flies, caterpillars, &c. Sulphur boiled in this ſolution, ſeems to acquire ſome degree of

Calamint || Calamy.

transparency.—This mineral is an article in the materia medica; but, before it comes to the ſhops is uſually roaſted or calcined, in order to ſeparate ſome arſenical or ſulphureous matter which in its crude ſtate it is ſuppoſed to contain, and to render it more eaſily reducible into a fine powder. In this ſtate it is employed in collyria againſt defluxions of thin acrid humours upon the eyes, for drying up moiſt running ulcers, and healing excoriations. It is the baſis of an officinal epulotic CERATE.

There is another ſubſtance from which this ſemi-metal is alſo obtained. This is called *cadmia fornacum*, or *cadmia of the furnaces*, to diſtinguiſh it from the other. This is a matter ſublimed when ores containing zinc, like thoſe of Rammelſberg, are ſmelted. This cadmia conſiſts of the flowers of the ſemi-metal ſublimed during the fuſion, and adhering to the inner ſurfaces of the walls of furnaces, where they ſuffer a ſemi-fuſion, and therefore acquire ſome ſolidity. So great a quantity of theſe is collected, that they form very thick incruſtations, which muſt be frequently taken off.

CALAMINT. See MELISSA and MENTHA, BOTANY *Index*.

CALAMUS. See BOTANY *Index*. There is but one ſpecies, the rotang. The ſtem is without branches, has a crown at top, and is everywhere beſet with ſtraight ſpines. This is the true Indian cane, which is not viſible on the outſide; but the bark being taken off diſcovers the ſmooth ſtick, which has no marks of ſpine on the bark, and is exactly like thoſe which the Dutch ſell to us; keeping this matter very ſecret, leſt travellers going by ſhould take as many canes out of the woods as they pleaſe. Sumatra is ſaid to be the place where moſt of theſe ſticks grow. Such are to be choſen as are of proper growth between two joints, ſuitable to the faſhionable length of canes as they are then worn; but ſuch are ſcarce. The calamus rotang is one of ſeveral plants from which the drug called *dragons blood* is obtained.

CALAMUS, in the ancient poets, denotes a ſimple kind of pipe or fiſtula, the muſical inſtrument of the ſhepherds and herdſmen; uſually made either of an oaten ſtalk or a reed.

CALAMUS *Aromaticus*, or *Sweet-ſcented Flag*, in the materia medica, a ſpecies of flag called *acorus* by Linnæus. See ACORUS. BOTANY *Index*.

CALAMUS *Scriptorius*, in antiquity, a reed or ruſh to write with. The ancients made uſe of ſtyles to write on tables covered with wax; and of reed, or ruſh, to write on parchment, or Egyptian paper.

CALAMY, EDMUND, an eminent Preſbyterian divine, born at London in the year 1600, and educated at Pembroke-hall, Cambridge, where his attachment to the Arminian party excluded him from a fellowſhip. Dr Felton biſhop of Ely, however, made him his chaplain; and, in 1639, he was choſen miniſter of St Mary Aldermary, in the city of London. Upon the opening of the long parliament, he diſtinguiſhed himſelf in defence of the preſbyterian cauſe; and had a principal hand in writing the famous *Smectymnus*, which, himſelf ſays, gave the firſt deadly blow to Epiſcopacy. The authors of this tract were five, the initials of whoſe names formed the name under which it was publiſhed; viz. Stephen Marſhal, Edmund Calamy, Thomas Young, Mathew Newcomen, and William Sparſtow. He was after that an active member in the aſſembly of divines, was a ſtrenuous oppoſer of ſectaries, and uſed his utmoſt endeavours to prevent thoſe violences committed after the king was brought from the iſle of Wight. In Cromwell's time, he lived privately, but was aſſiduous in promoting the king's return; for which he was afterwards offered a biſhopric, but refuſed it. He was ejected for noncomformity in 1662; and died of grief at the ſight of the great fire of London. Calamy.

CALAMY, *Edmund*, grandſon to the preceding, (by his eldeſt ſon, Mr Edmund Calamy, who was ejected from the living of Moxton in Eſſex on St Bartholomew's day 1662) was born in London, April 5. 1671. After having learned the languages, and gone through a courſe of natural philoſophy and logic at a private academy in England, he ſtudied philoſophy and civil law at the univerſity of Utrecht, and attended the lectures of the learned Grævius. Whilſt he reſided here, an offer of a profeſſor's chair in the univerſity of Edinburgh was made him by Mr Carſtairs, principal of that univerſity, ſent over on purpoſe to find a perſon properly qualified for ſuch an office. This he declined; and returned to England in 1691, bringing with him letters from Grævius to Dr Pococke canon of Chriſtchurch and regius profeſſor of Hebrew, and to Dr Bernard, Savilian profeſſor of aſtronomy, who obtained leave for him to proſecute his ſtudies in the Bodleian library. Having reſolved to make divinity his principal ſtudy, he entered into an examination of the controverſy between the conformiſts and nonconformiſts; which determined him to join the latter; and coming to London in 1692, he was unanimouſly choſen aſſiſtant to Mr Matthew Sylveſter at Blackfriars: and in 1694, he was ordained at Mr Anneſly's meeting-houſe in Little St Helena, and ſoon after was invited to become aſſiſtant to Mr Daniel Williams in Hand-Alley. In 1702, he was choſen to be one of the lecturers in Salters-hall; and in 1073, ſucceeded Mr Vincent Alſop as paſtor of a great congregation in Weſtminſter. He drew up the table of contents to Mr Baxter's hiſtory of his life and times, which was ſent to the preſs in 1696; made ſome remarks on the work itſelf, and added to it an index; and, reflecting on the uſefulneſs of the book, he ſaw the expediency of continuing it, for Mr Baxter's hiſtory came no lower than the year 1684. Accordingly he compoſed an abridgement of it, with an account of many other miniſters who were ejected after the reſtoration of Charles II.; their apology, containing the grounds of their nonconformity and practice as to ſtated and occaſional communion with the church of England; and a continuation of their hiſtory till the year 1691. This work was publiſhed in 1702. He afterwards publiſhed a moderate defence of nonconformity, in three tracts, in anſwer to ſome tracts of Dr Hoadley. In 1709, Mr Calamy made a tour to Scotland; and had the degree of doctor of divinity conferred on him by the univerſities of Edinburgh, Aberdeen, and Glaſgow. In 1713, he publiſhed a ſecond edition of his Abridgement of Mr Baxter's hiſtory of his life and times; in which, among other additions, there is a continuation of the hiſtory through King William's reign, and Queen Anne's, down to the paſſing of the occaſional bill; and in the cloſe is ſubjoined the reformed liturgy, which was drawn

Calandre, Calas.

drawn up and presented to the bishops in 1661, "that the world may judge (he says in his preface) how fairly the ejected ministers have been often represented as irreconcilable enemies to all liturgies." In 1718, he wrote a vindication of his grandfather, and several other persons, against certain reflections cast upon them by Mr Archdeacon Echard in his History of England; and in 1728 appeared his Continuation of the account of the ministers, lecturers, masters, and fellows of colleges, and schoolmasters, who were ejected, after the restoration in 1660, by or before the act of uniformity. He died June 3. 1732, greatly regretted not only by the dissenters, but also by the moderate members of the established church, both clergy and laity, with many of whom he lived in great intimacy. Besides the pieces already mentioned, he published a great many sermons on several subjects and occasions. He was twice married, and had 13 children.

CALANDRE, a name given by the French writers to an insect that does vast mischief in granaries. It is properly of the scarab or beetle class; it has two antennæ or horns formed of a great number of round joints, and covered with a soft and short down; from the anterior part of the head there is thrust out a trunk, which is so formed at the end, that the creature easily makes way with it through the coat or skin that covers the grain, and gets at the meal or farina on which it feeds; the inside of the grains is also the place where the female deposites her eggs, that the young progeny may be born with provision about them. When the female has pierced a grain of corn for this purpose, she deposites in it one egg, or at the utmost two, but she most frequently lays them single: these eggs hatch into small worms, which are usually found with their bodies rolled up in a spiral form, and after eating till they arrive at their full growth, they are changed into chrysales, and from these in about a fortnight comes out the perfect calandre. The female lays a considerable number of eggs; and the increase of these creatures would be very great, but nature has so ordered it, that while in the egg state, and even while in that of the worm, they are subject to be eaten by mites: these little vermine are always very plentiful in granaries, and they destroy the far greater number of these larger animals.

CALAS, John; the name of a most unfortunate Protestant merchant at Thoulouse, inhumanly butchered under forms of law cruelly prostituted to shelter the sanguinary dictates of ignorant Popish zeal. He had lived 40 years at Thoulouse. His wife was an English woman of French extraction: and they had five sons; one of whom, Lewis, had turned Catholic through the persuasions of a Catholic maid who had lived 30 years in the family. In October 1761, the family consisted of Calas, his wife, Mark Anthony their son, Peter their second son, and this maid. Anthony was educated for the bar; but being of a melancholy turn of mind, was continually dwelling on passages from authors on the subject of suicide, and one night in that month hanged himself on a bar laid across two folding doors in their shop. The crowd collected by the confusion of the family on so shocking a discovery, took it into their heads that he had been strangled by the family to prevent his changing his religion, and that this was a common practice among Protestants. The officers of justice adopted the popular tale, and were supplied by the mob with what they accepted as evidences of the fact. The fraternity of White Penitents got the body, buried it with great ceremony, and performed a solemn service for him as a martyr: the Franciscans did the same; and after these formalities no one doubted the guilt of the devoted heretical family. They were all condemned to the torture, to bring them to confession: they appealed to the parliament; who, as weak and as wicked as the subordinate magistrates, sentenced the father to the torture, ordinary and extraordinary, to be broken alive upon the wheel, and then to be burnt to ashes. A diabolical decree! which, to the shame of humanity, was actually carried into execution. Peter Calas, the other son, was banished for life; and the rest were acquitted. The distracted widow found some friends, and among the rest M. Voltaire, who laid her case before the council of state at Versailles, and the parliament of Thoulouse was ordered to transmit the proceedings. These the king and council unanimously agreed to annul; the capitoul or chief magistrate of Thoulouse was degraded and fined; old Calas was declared to have been innocent; and every imputation of guilt was removed from the family, who also received from the king and clergy considerable gratuities.

Calash, Calasio.

CALASH, or Calesh, a small light kind of chariot or chair, with very low wheels, used chiefly for taking the air in parks and gardens. The calash is for the most part richly decorated, and open on all sides for the conveniency of the air and prospect, or at most enclosed with light mantlets of wax-cloth to be opened and shut at pleasure. In the Philosophical Transactions we have a description of a new sort of calash going on two wheels, not hung on traces, yet easier than the common coaches, over which it has this further advantage, that whereas a common coach will overturn if one wheel go on a surface a foot and a half higher than the other, this will admit of a difference of $3\frac{1}{2}$ feet without danger of overturning. Add, that it would turn over and over; that is, after the spokes being so turned as that they are parallel to the horizon, and one wheel flat over the head of him that rides in it, and the other flat under him, it will turn once more, by which the wheels are placed *in statu quo*, without any disorder to the horse or rider.

CALASIO, Marius, a Franciscan, and professor of the Hebrew language at Rome, of whom there is very little to be said, but that he published there, in the year 1621, a Concordance of the Bible, which consisted of four great volumes in folio. This work has been highly approved and commended both by Protestants and Papists, and is indeed a most admirable work. For besides the Hebrew words in the Bible, which are in the body of the book, with the Latin version over against them; there are, in the margin, the differences between the Septuagint version and the Vulgate; so that at one view may be seen wherein the three Bibles agree, and wherein they differ. Moreover, at the beginning of every article there is a kind of dictionary, which gives the signification of each Hebrew word; affords an opportunity of comparing it with other oriental languages, viz. with the Syriac, Arabic, and Chaldee; and is extremely useful for

Calaſiris || Calauria.

for determining more exactly the true meaning of the Hebrew words.

CALASIRIS, in antiquity, a linen tunic fringed at the bottom, and worn by the Egyptians under a white woollen garment: but this laſt they were obliged to pull off when they entered the temples, being only allowed to appear there in linen garments.

CALATAJUD, a large and handſome town of Spain, in the kingdom of Arragon; ſituated at the confluence of the rivers Xalon and Xiloca, at the end of a very fertile valley, with a good caſtle on a rock. W. Long. 2. 9. N. Lat. 41. 22.

CALATHUS, in antiquity, a kind of hand baſket made of light wood or ruſhes; uſed by the women ſometimes to gather flowers, but chiefly after the example of Minerva to put their work in. The figure of the calathus, as repreſented on ancient monuments, is narrow at the bottom, and widening upwards like that of a top. Pliny compares it to that of a lily. The calathus or work baſket of Minerva is no leſs celebrated among the poets than her diſtaff.

Calathus was alſo the name of a cup for wine uſed in ſacrifices.

CALATOR, in antiquity, a crier, or officer appointed to publiſh ſome thing aloud, or call the people together. The word is formed from καλεω, *voco*, *I call.* Such miniſters the pontifices had, whom they uſed to ſend before them when they went to ſacrifice on *feriæ* or holidays, to advertiſe the people to leave off work. The magiſtrates alſo uſed *calatores*, to call the people to the comitia, both *curiata* and *centuriata.* The officers in the army alſo had *calatores;* as had likewiſe many private families, to invite their gueſts to entertainments.

CALATRAVA, a city of New Caſtile, in Spain, ſituated on the river Guadiana, 45 miles ſouth of Toledo. W. Long. 4. 20. N. Lat. 39. 0.

Knights of Calatrava, a military order in Spain, inſtituted by Sancho III. king of Caſtile, upon the following occaſion: When that prince took the ſtrong fort of Calatrava from the Moors of Andaluſia, he gave it to the Templars, who, wanting courage to defend it, returned it him again. Then Don Reymond of the order of the Ciſtercians, accompanied with ſeveral perſons of quality, made an offer to defend the place, which the king thereupon delivered up to them, and inſtituted that order. It increaſed ſo much under the reign of Aſphonſus, that the knights deſired they might have a grand maſter, which was granted. Ferdinand and Iſabella afterwards, with the conſent of Pope Innocent VIII. re-united the grand maſterſhip of Calatrava to the Spaniſh crown; ſo that the kings of Spain are now become perpetual adminiſtrators thereof.

The knights of Calatrava bear a croſs gules, fleur-deliſed with green, &c. Their rule and habit was originally that of the Ciſtercians.

CALAURIA, in *Ancient Geography*, an iſland of Greece in the Saronic bay, over againſt the port of Troezen, at the diſtance of 40 ſtadia. Hither Demoſthenes went twice into baniſhment; and here he died. Neptune was ſaid to have accepted this iſland from Apollo, in exchange for Delos. The city ſtood on a high ridge nearly in the middle of the iſland, commanding an extenſive view of the gulf and its coaſts. There was his holy temple. The prieſteſs was a virgin, who was diſmiſſed when marriageable. Seven of the cities near the iſland held a congreſs at it, and ſacrificed jointly to the deity. Athens, Ægina, and Epidaurus, were of this number, with Nauplias, for which place Argos contributed. The Macedonians, when they had reduced Greece, were afraid to violate the ſanctuary, by forcing from it the fugitives, his ſuppliants. Antipater commanded his general to bring away the orators, who had offended him, alive; but Demoſthenes could not be prevailed on to ſurrender. His monument remained in the ſecond century, within the encloſure of the temple. The city of Calauria has been long abandoned. Traces of buildings and of ancient walls appear nearly level with the ground; and ſome ſtones, in their places, each with a ſeat and back forming a little circle, once perhaps a bath. The temple, which was of the Doric order, and not large, as may be inferred from the fragments, is reduced to an inconſiderable heap of ruins. The iſland is now called *Poro.* It ſtretches along before the coaſt of the Morea in a lower ridge, and is ſeparated from it by a canal only four ſtadia, or half a mile wide. This which is called Poro or the Ferry, in ſtill weather may be paſſed on foot, as the water is not deep. It has given its name to the iſland; and alſo to the town, which conſiſts of about 200 houſes, mean and low, with flat roofs; riſing on the ſlope of a bare diſagreeable rock.

Calcada || Calcearium

CALCADA, or *St Domingo* Calcalda, a town of Spain, ſituated in W. Long. 3. 5. N. Lat. 42. 36.

CALCAR, a very ſtrong town of Germany, in the circle of Weſtphalia, and duchy of Cleves. It belongs to the king of Pruſſia, and is ſeated near the Rhine, in E. Long. 5. 41. N. Lat. 51. 45.

Calcar, in glaſs-making, the name of a ſmall oven or reverberatory furnace, in which the firſt calcination of ſand and ſalt of potaſhes is made for the turning them into what is called *frit.* This furnace is made in the faſhion of an oven, ten feet long, ſeven broad in the wideſt part, and two feet deep. On one ſide of it is a trench ſix inches ſquare, the upper part of which is level with the calcar, and ſeparated only from it at the mouth by bricks nine inches wide. Into this trench they put ſea-coal, the flame of which is carried into every part of the furnace, and is reverberated from the roof upon the frit, over the ſurface of which the ſmoke flies very black, and goes out at the mouth of the calcar; the coals burn on iron grates, and the aſhes fall through.

Calcar, *John de*, a celebrated painter, was the diſciple of Titian, and perfected himſelf by ſtudying Raphael. Among other pieces he drew a Nativity, repreſenting the angels around the infant Chriſt; and ſo ordered the diſpoſition of his picture, that the light all proceeds from the Child. He died at Naples, in 1546, in the flower of his age. It was he who deſigned the anatomical figures of Veſal, and the portraits of the painters of Veſari.

CALCAREOUS, ſomething that partakes of the nature and qualities of calx, or lime. We ſay, a *calcareous* earth, *calcareous* ſtone. See Chemistry *Index.*

CALCEARIUM, in antiquity, a donative or largeſs

Calceolaria || Calculus.

geſs beſtowed on Roman ſoldiers for buying ſhoes. In monaſteries, *calcearium* denoted the daily ſervice of cleaning the ſhoes of the religious.

CALCEOLARIA. See BOTANY *Index*.

CALCHAS, in fabulous hiſtory, a famous diviner, followed the Greek army to Troy. He foretold that the ſiege would laſt ten years: and that the fleet, which was detained in the port of Aulis by contrary winds, would not ſail till Agamemnon's daughter had been ſacrificed to Diana. After the taking of Troy, he retired to Colophon; where, it is ſaid, he died of grief, becauſe he could not divine what another of his profeſſion, called *Mopſus*, had diſcovered.

CALCINATION, in *Chemiſtry*, the reducing of ſubſtances to a calx, or powder, by fire. Limeſtone is ſaid to be calcined or burned by being deprived of its carbonic acid, and thus brought to the cauſtic ſtate. But when a metallic ſubſtance is calcined by being expoſed to ſtrong heat, it aſſumes the form of powder or calx, by combining with oxygen. See CHEMISTRY *Index*.

CALCINATO, a town of Italy, in the duchy of Mantua, remarkable for a victory gained over the Imperialiſts by the French in 1706. E. Long. 9. 55. N. Lat. 45. 25.

CALCULARY *of a* PEAR, a congeries of little ſtrong knots diſperſed through the whole parenchyma of the fruit. The calculary is moſt obſerved in rough-taſted or choke pears. The knots lie more continuous and compact together towards the pear where they ſurround the ACETARY. About the ſtalk they ſtand more diſtant; but towards the cork, or ſtool of the flower, they ſtill grow cloſer, and there at laſt gather into the firmneſs of a plum ſtone. The calculary is no vital or eſſential part of the fruit; the ſeveral knots whereof it conſiſts being only ſo many concretions or precipitations out of the ſap, as we ſee in urines, wines, and other liquors.

CALCULATION, the act of computing ſeveral ſums, by adding, ſubtracting, multiplying, or dividing. See ARITHMETIC.

CALCULATION is more particularly uſed to ſignify the computations in aſtronomy and geometry, for making tables of logarithms, ephemerides, finding the time of eclipſes, &c. See ASTRONOMY, GEOMETRY, and LOGARITHMS.

CALCULUS, primarily denotes a little ſtone or pebble, anciently uſed in making computations, taking of ſuffrages, playing at tables, and the like. In after times, pieces of ivory, and counters ſtruck of ſilver, gold, and other matters, were uſed in lieu thereof, but ſtill retaining the ancient names. Computiſts were by the lawyers called *calculones*, when they were either ſlaves, or newly freed men; thoſe of a better condition were named *calculatores* or *numerarii*: ordinarily there was one of theſe in each family of diſtinction. The Roman judges anciently gave their opinions by calculi, which were white for abſolution, and black for condemnation. Hence *calculus albus*, in ancient writers, denotes a favourable vote, either in a perſon to be abſolved and acquitted of a charge, or elected to ſome dignity or poſt; as *calculus niger* did the contrary. This uſage is ſaid to have been borrowed from the Thracians, who marked their happy or proſperous days by *white*, and their unhappy by *black*, pebbles, put each night into an urn. Calculus.

Beſides the diverſity of colour, there were ſome calculi alſo which had figures or characters engraven on them, as thoſe which were in uſe in taking the ſuffrages both in the ſenate and at aſſemblies of the people. Theſe calculi were made of thin wood, poliſhed and covered over with wax. Their form is ſtill ſeen in ſome medals of the Caſſian family; and the manner of caſting them into the urns, in the medals of the Licinian family. The letters marked upon theſe calculi were U. R. for *uti rogas*, and A. for *antiquo*; the firſt of which expreſſed an approbation of the law, the latter a rejection of it. Afterwards the judges who ſat in capital cauſes uſed calculi marked with the letter A. for *abſolvo*; C. for *condemno*; and N. L. for *non liquet*, ſignifying that a more full information was required.

Calculus is alſo uſed in ancient geometric writers for a kind of weight equal to two grains of cicer. Some make it equivalent to the ſiliqua, which is equal to three grains of barley. Two calculi made the ceratium.

CALCULUS, in *Mathematics*, is a certain method of performing inveſtigations and reſolutions, particularly in mechanical philoſophy. Thus there is the *Differential* calculus, the *Exponential*, the *Integral*, the *Literal*, and the *Antecedental*.

CALCULUS *Differentialis*, is a method of differencing quantities, or of finding an infinitely ſmall quantity, which being taken infinite times, ſhall be equal to a given quantity; or, it is the arithmetic of the infinitely ſmall differences of variable quantities.

The foundation of this calculus is an infinitely ſmall quantity, or an infiniteſimal, which is a portion of a quantity incomparable to that quantity, or that is leſs than any aſſignable one, and therefore accounted as nothing; the error accruing by omitting it being leſs than any aſſignable one. Hence two quantities, only differing by an infiniteſimal, are reputed equal. Thus, in aſtronomy, the diameter of the earth is an infiniteſimal, in reſpect of the diſtance of the fixed ſtars; and the ſame holds in abſtract quantities. The term, infiniteſimal, therefore, is merely reſpective, and involves a relation to another quantity; and does not denote any real ens or being. Now infiniteſimals are called *differentials*, or *differential quantities*, when they are conſidered as the differences of two quantities. Sir Iſaac Newton calls them *moments*; conſidering them as the momentary increments of quantities, v. g. of a line generated by the flux of a point, or of a ſurface by the flux of a line. The differential calculus, therefore, and the doctrine of fluxions, are the ſame thing under different names; the former given by M. Leibnitz, and the latter by Sir Iſaac Newton: each of whom lays claim to the diſcovery. There is, indeed a difference in the manner of expreſſing the quantities reſulting from the different views wherein the two authors conſider the infiniteſimals: the one as moments, the other as differences. Leibnitz, and moſt foreigners, expreſs the differentials of quantities by the ſame letters as variable ones, only prefixing the letter d: thus the differential of x is called dx; and that of y, dy: now dx is a poſitive quantity, if x continually increaſe; negative, if it decreaſe. The Engliſh, with Sir Iſaac Newton,

Calculus. Newton, inſtead of dx write $\dot{x}$ (with a dot over it), for dy, $\dot{y}$, &c. which foreigners object againſt, on account of that confuſion of points, which they imagine ariſes when differentials are again differenced; beſides, that the printers are more apt to overlook a point than a letter. Stable quantities being always expreſſed by the firſt letters of the alphabet $da=o$, $db=o$, $dc=o$; wherefore $d(x+y-a)=dx+dy$, and $d(x-y+a)=dx+dy$. So that the differencing of quantities is eaſily performed by the addition or ſubtraction of their compounds.

To difference quantities that multiply each other; the rule is, firſt, multiply the differential of one factor into the other factor, the ſum of the two factors is the differential ſought: thus, the quantities being x, y, the differential will be $x\,dy+y\,dx$, i. e. $d(xy)=x\,dy+y\,dx$. Secondly, If there be three quantities mutually multiplying each other, the factum of the two muſt then be multiplied into the differential of the third; thus ſuppoſe $v\,x\,y$, let $v\,x=t$, then $v\,x\,y=t\,y$; conſequently $d(v\,x\,y)=t\,dy+y\,dt$: but $dt=v\,dx+x\,dv$. Theſe values, therefore, being ſubſtituted in the antecedent differential, $t\,dy+y\,dt$, the reſult is, $d(v\,x\,y)=v\,x\,dy+v\,y\,dx+x\,y\,dv$. Hence it is eaſy to apprehend how to proceed, where the quantities are more than three. If one variable quantity increaſe, while the other y decreaſes, it is evident $y\,dx-x\,dy$ will be the differential of $x\,y$.

To difference quantities that mutually divide each other; the rule is, firſt, multiply the differential of the diviſor into the dividend; and on the contrary, the differential of the dividend into the diviſor; ſubtract the laſt product from the firſt, and divide the remainder by the ſquare of the diviſor; the quotient is the differential of the quantities mutually dividing each other. See Fluxions.

Calculus *Exponentialis*, is a method of differencing exponential quantities, or of finding and ſumming up the differentials or moments of exponential quantities; or at leaſt bringing them to geometrical conſtructions.

By exponential quantity, is here underſtood a power, whoſe exponent is variable; v. g. $x^x.a^x.x^y$. where the exponent x does not denote the ſame in all the points of a curve, but in ſome ſtands for 2, in others for 3, in others for 5, &c.

To difference an exponential quantity; there is nothing required but to reduce the exponential quantities to logarithmic ones; which done, the differencing is managed as in logarithmic quantities.—Thus, ſuppoſe the differential of the exponential quantity x^y required, let

$$x^y=z$$

Then will $y\,lx=lz$

$$lx\,dy+\frac{y\,dx}{x}=\frac{dz}{z}$$

$$z\,lx\,dy+\frac{z\,y\,dx}{x}=dz$$

That is, $x^y\,lx\,dy+x^{y-1}dx=dz$.

Calculus *Integralis*, or *Summatorius*, is a method of integrating, or ſumming up moments, or differential quantities; i. e. from a differential quantity given, to find the quantity from whoſe differencing the given differential reſults. Calculus.

The integral calculus, therefore, is the inverſe of the differential one: whence the Engliſh, who uſually call the differential method *fluxions*, give this *calculus*, which aſcends from the fluxions, to the flowing or variable quantities: or as foreigners expreſs it, from the differences to the ſums, by the name of the *inverſe method of fluxions*.

Hence, the integration is known to be juſtly performed, if the quantity found, according to the rules of the differential calculus, being differenced, produce that propoſed to be ſummed.

Suppoſe $\int$ the ſign of the ſum, or integral quantity, then $\int y\,dx$ will denote the ſum, or integral of the differential $y\,dx$.

To integrate, or ſum up a differential quantity: it is demonſtrated, firſt, that $\int dx=x$: ſecondly, $\int(dx+dy)=x+y$: thirdly, $\int(x\,dy+y\,dx)-x\,y$: fourthly, $\int(m\,x^{m-1}dx)=x^m$: fifthly, $\int(n:m)\,x^{\frac{n-m}{m}}dx=x^{\frac{n}{m}}$: ſixthly, $\int(y\,dz-x\,dy):y^2=x:y$. Of theſe, the fourth and fifth caſes are the moſt frequent, wherein the differential quantity is integrated, by adding a variable unity to the exponent, and dividing the ſum by the new exponent multiplied into the differential of the root; v. g. the fourth caſe, by $m-(1+1)dx$, i. e. by $m\,dx$.

If the differential quantity to be integrated doth not come under any of theſe formulas, it muſt either be reduced to an integral finite, or an infinite ſeries, each of whoſe terms may be ſummed.

It may be here obſerved, that, as in the analyſis of finites, any quantity may be raiſed to any degree of power; but *vice verſa*, the root cannot be extracted out of any number required; ſo in the analyſis of infinites, any variable or flowing quantity may be differenced; but *vice verſa*, any differential cannot be integrated. And as, in the analyſis of finites, we are not yet arrived at a method of extracting the roots of all equations, ſo neither has the integral calculus arrived at its perfection: and as in the former we are obliged to have recourſe to approximation, ſo in the latter we have recourſe to infinite ſeries, where we cannot attain to a perfect integration.

Calculus *Literalis*, or *Literal* Calculus, is the ſame with ſpecious arithmetic, or algebra, ſo called from its uſing the letters of the alphabet; in contradiſtinction to numeral arithmetic, which uſes figures. In the literal calculus given quantities are expreſſed by the firſt letters, *a b c d*; and quantities ſought by the laſt *z y x*, &c. Equal quantities are denoted by the ſame letters.

Calculus, *Antecedental*, a geometrical method of reaſoning invented by Mr Glenie, which, without any conſideration of motion or velocity, is applicable to all the purpoſes of fluxions. In this method, ſays Mr Glenie, "every expreſſion is truly and ſtrictly geometrical, is founded on principles frequently made uſe of by the ancient geometers, principles admitted into the very firſt elements of geometry, and repeatedly uſed by Euclid himſelf. As it is a branch of general geometrical proportion, or univerſal compariſon, and is derived from an examination of the antecedents of ratios, having

Calculus. ing given conſequents and a given ſtandard of compariſon in various degrees of augmentation and diminution they undergo by compoſition and decompoſition, I have called it the antecedental calculus. As it is purely geometrical, and perfectly ſcientific, I have ſince it firſt occurred to me in 1779, always made uſe of it inſtead of the fluxionary and differential calculi, which are merely arithmetical. Its principles are totally unconnected with the ideas of motion and time, which, ſtrictly ſpeaking, are foreign to pure geometry and abſtract ſcience, though, in mixed mathematics and natural philoſophy, they are equally applicable to every inveſtigation, involving the conſideration of either with the two numerical methods juſt mentioned. And as many ſuch inveſtigations require compoſitions and decompoſitions of ratios, extending greatly beyond the triplicate and ſubtriplicate, this calculus in all of them furniſhes every expreſſion in a ſtrictly geometrical form. The ſtandards of compariſon in it may be any magnitudes whatever, and are of courſe indefinite and innumerable; and the conſequents of the ratios, compounded or decompounded, may be either equal or unequal, homogeneous or heterogeneous. In the fluxionary and differential methods, on the other hand, 1, or unit, is not only the ſtandard of compariſon, but alſo the conſequent of every ratio compounded or decompounded." See Phil. Tranſ. Edin. vol. iv.

Some mathematicians, however, are of opinion that the advantage to be derived from the employment of this calculus is not ſo great as the author ſeems to promiſe from it.

Calculus *Minervæ*, among the ancient lawyers, denoted the deciſion of a cauſe, wherein the judges were equally divided. The expreſſion is taken from the hiſtory of Oreſtes, repreſented by Æſchylus and Euripides; at whoſe trial, before the Areopagites, for the murder of his mother, the votes being equally divided for and againſt him, Minerva interpoſed, and gave the caſting vote or calculus in his behalf.

M. Cramer, profeſſor at Marpurg, has a diſcourſe expreſs, *De Calculo Minervæ;* wherein he maintains, that all the effect an entire equality of voices can have, is to leave the cauſe in *ſtatu quo*.

Calculus *Tiburtinus*, a ſort of figured ſtone, formed in great plenty about the cataracts of the Anio, and other rivers in Italy; of a white colour, and in ſhape oblong, round, or echinated. They are a ſpecies of the *ſtiriæ lapideæ*, or *ſtalactites*, and generated like them; and ſo like ſugar plums, that it is a common jeſt at Rome to deceive the unexperienced by ſerving them up as deſſerts.

Calculus, in *Medicine*, the diſeaſe of the ſtone in the bladder, or kidneys. The term is Latin, and ſignifies a *little pebble*. The calculus in the bladder is called *lithiaſis;* and in the kidneys, *nephritis*. See Medicine and Surgery.

Human calculi are commonly formed of different ſtrata or incruſtations; ſometimes ſmooth and heavy like mineral ſtones; but often rough, ſpongy, light, and full of inequalities or protuberances: chemically analyzed, or diſtilled in an open fire, they nearly yield the ſame principles as urine itſelf, or at leaſt an empyreumatic volatile urinous matter, together with a great deal of air. They never have, nor can have, naturally, any foreign matter for a baſis: but they may by accident; an inſtance of which is related by Dr Percival *. A bougie had unfortunately ſlipped into the bladder, and upon it a ſtone of conſiderable ſize was formed in leſs than a year. This ſtone had ſo much the appearance of chalk, that the doctor was induced to try whether it could be converted into quicklime. His experiment ſucceeded, both with that and ſome other calculi; from which he conjectures, that hard waters which contain calcareous earth may contribute towards the formation of theſe calculi. Calcutta. * *Eſſays*, Vol. III. p. 165.

CALCUTTA, the capital of the province of Bengal, and of all the Britiſh poſſeſſions in the Eaſt Indies, is ſituated on the river Huguely, a branch of the Ganges, about 100 miles from the ſea, in N. Lat. 23. and Long. 88. 28. E. from Greenwich. It is but a modern city, built on the ſite of a village called *Govindpour*. The Engliſh firſt obtained the Mogul's permiſſion to ſettle in this place in the year 1690; and Mr Job Charnock, the company's agent, made choice of the ſpot on which the city ſtands, on account of a large ſhady grove which grew there; though in other reſpects it was the worſt he could have pitched upon; for three miles to the north coaſt, there is a ſalt water lake, which overflows in September, and when the flood retires in December, leaves behind ſuch a quantity of fiſh and other putreſcent matter, as renders the air very unhealthy. The cuſtom of the Gentoos throwing the dead bodies of their poor people into the river is alſo very diſguſtful, and undoubtedly contributes to render the place unhealthy, as well as the cauſe already mentioned.

Calcutta is now become a large and populous city, being ſuppoſed at preſent to contain 500,000 inhabitants. It is elegantly built, at leaſt the part inhabited by the Engliſh; but the reſt, and that the greateſt part, is built after the faſhion of the cities of India in general. The plan of all theſe is nearly the ſame; their ſtreets are exceedingly confined, narrow, and crooked, with a vaſt number of ponds, reſervoirs, and gardens interſperſed. A few of the ſtreets are paved with brick. The houſes are built, ſome with brick, others with mud, and a ſtill greater number with bamboos and mats; all which different kinds of fabrics ſtanding intermixed with one another, form a very uncouth appearance. The brick houſes are ſeldom above two ſtories high, but thoſe of mud and bamboos are only one, and are covered with thatch. The roofs of the brick houſes are flat and terraced. Theſe, however, are much fewer in number than the other two kinds; ſo that fires, which often happen, do not ſometimes meet with a brick houſe to obſtruct their progreſs in a whole ſtreet. Within theſe 20 or 25 years Calcutta has been greatly improved both in appearance and in the ſalubrity of its air: the ſtreets have been properly drained, and the ponds filled; thereby removing a vaſt ſurface of ſtagnant water, the exhalations of which were particularly hurtful. The citadel is named Fort William, and is ſuperior as a fortreſs to any in India; but is now on too extenſive a ſcale to anſwer the purpoſe for which it was intended, viz. the holding a poſt in caſe of extremity. It was begun on this extended plan by Lord Clive immediately after the battle of Plaſſey. The expence attending it was ſuppoſed to amount to two millions ſterling.

Calcutta is the emporium of Bengal, and the reſi-

Calcutta. dence of the governor general of India. Its flouriſhing ſtate may in a great meaſure be ſuppoſed owing to the unlimited toleration of all religions allowed here; the Pagans being ſuffered to carry their idols in proceſſion, the Mahomedans not being diſcountenanced, and the Roman Catholics being allowed a church.—At about a mile's diſtance from the town is a plain where the natives annually undergo a very ſtrange kind of penance on the 9th of April; ſome for the ſins they have committed, others for thoſe they may commit, and others in conſequence of a vow made by their parents. This ceremony is performed in the following manner: Thirty bamboos, each about the height of 20 feet, are erected in the plain above-mentioned. On the top of theſe they contrive to fix a ſwivel, and another bamboo of thirty feet or more croſſes it, at each end of which hangs a rope. The people pull down one end of this rope, and the devotee placing himſelf under it, the bramin pinches up a large piece of ſkin under both the ſhoulderblades, ſometimes in the breaſts, and thruſts a ſtrong iron hook through each. Theſe hooks have lines of Indian graſs hanging to them, which the prieſt makes faſt to the rope at the end of the croſs bamboo, and at the ſame time puts a ſaſh round the body of the devotee, laying it looſely in the hollow of the hooks, leſt by the ſkin's giving way, he ſhould fall to the ground. When this is done, the people haul down the other end of the bamboo; by which means the devotee is immediately lifted up 30 feet or more from the ground, and they run round as faſt as their legs can carry them. Thus the devotee is thrown out the whole length of the rope, where, as he ſwings, he plays a thouſand antic tricks; being painted and dreſſed in a very particular manner, on purpoſe to make him look more ridiculous. Some of them continue ſwinging half an hour, others leſs. The devotees undergo a preparation of four days for this ceremony. On the firſt and third they abſtain from all kinds of food; but eat fruit on the other two. During this time of preparation they walk about the ſtreets in their fantaſtical dreſſes, dancing to the ſound of drums and horns; and ſome to expreſs the greater ardour of devotion, run a rod of iron quite through their tongues, and ſometimes through their cheeks alſo.

Before the war of 1755, Calcutta was commonly garriſoned by 300 Europeans, who were frequently employed in conveying the company's veſſels from Patna, loaded with ſaltpetre, piece goods, opium, and raw ſilk. The trade of Bengal alone ſupplied rich cargoes for 50 or 60 ſhips annually, beſides what was carried on in ſmall veſſels to the adjacent countries. It was this flouriſhing ſtate of Calcutta that probably was one motive for the nabob Surajah Dowla to attack it in the year 1756. Having had the fort of Coſſimbuzar delivered up to him, he marched againſt Calcutta with all his forces, amounting to 70,000 horſe and foot, with 400 elephants, and inveſted the place on the 15th of June. Previous to any hoſtilities, however, he wrote a letter to Mr Drake the governor, offering to withdraw his troops, on condition that he would pay him his duty on the trade for 15 years paſt, defray the expence of his army, and deliver up the black merchants who were in the fort. This being refuſed, he attacked one of the redoubts at the entrance of the town; but was repulſed with great ſlaughter. On the Calcutta. 16th he attacked another advanced poſt, but was likewiſe repulſed with great loſs. Nothwithſtanding this diſappointment, however, the attempt was renewed on the 18th, when the troops abandoned theſe poſts, and retreated into the fort; on which the nabob's troops entered the town, and plundered it for 24 hours. An order was then given for attacking the fort; for which purpoſe a ſmall breaſtwork was thrown up, and two twelve pounders mounted upon it; but without firing oftener than two or three times an hour. The governor then called a council of war, when the captain of the train informed them, that there was not ammunition in the fort to ſerve three days; in conſequence of which the principal ladies were ſent on board the ſhips lying before the fort. They were followed by the governor, who declared himſelf a Quaker, and left the place to be defended by Mr Holwell the ſecond in council. Beſides the governor, four of the council, eight gentlemen of the company's ſervice, four officers, and 100 ſoldiers, with 52 free merchants, captains of ſhips, and other gentlemen, eſcaped on board the ſhips, where were alſo 59 ladies, with 33 of their children. The whole number left in the fort was about 250 effective men, with Mr Holwell, four captains, five lieutenants, ſix enſigns, and five ſerjeants; as alſo 14 ſea captains, and 29 gentlemen of the factory. Mr Holwell then having held a council of war, divided three cheſts of treaſure among the diſcontented ſoldiers, making them large promiſes alſo, if they behaved with courage and fidelity; after which he boldly ſtood on the defence of the place, notwithſtanding the immenſe force which oppoſed him. The attack was very vigorous; the enemy having got poſſeſſion of the houſes, galled the Engliſh from thence, and drove them from the baſtions; but they themſelves were ſeveral times diſlodged by the fire from the fort, which killed an incredible number, with the loſs of only five Engliſh ſoldiers the firſt day. The attack, however, was continued till the afternoon of the 20th; when many of the garriſon being killed and wounded, and their ammunition almoſt exhauſted, a flag of truce was hung out. Mr Holwell intended to have availed himſelf of this opportunity to make his eſcape on board the ſhips, but they had fallen ſeveral miles down from the fort, without leaving even a ſingle boat to facilitate the eſcape of thoſe who remained. In the mean time, however, the back-gate was betrayed by the Dutch guard, and the enemy, entering the fort, killed all they firſt met, and took the reſt priſoners.

The fort was taken before ſix in the evening; and, in an hour after, Mr Holwell had three audiences of the nabob, the laſt being in the durbar or council. In all of theſe the governor had the moſt poſitive aſſurances that no harm ſhould happen to any of the priſoners; but he was ſurpriſed and enraged at finding only 5000l. in the fort, inſtead of the immenſe treaſures he expected; and to this as well as perhaps to the reſentment of the jemmidaars or officers, of whom many were killed in the ſiege, we may impute the cataſtrophe that followed.

As ſoon as it was dark, the Engliſh priſoners, to the number of 146, were directed by the jemmidaars who guarded them, to collect themſelves into one body, and ſit down quietly under the arched veranda,

or

Calcutta. or piazza, to the weſtward of the Black Hole priſon. Beſides the guard over them, another was placed at the ſouth end of this veranda, to prevent the eſcape of any of them. About 500 gunmen, with lighted matches, were drawn up on the parade; and ſoon after the factory was in flames to the right and left of the priſoners, who had various conjectures on this appearance. The fire advanced with rapidity on both ſides; and it was the prevailing opinion of the Engliſh, that they were to be ſuffocated between the two fires. On this they ſoon came to a reſolution of ruſhing on the guard, ſeizing their ſcimitars, and attacking the troops upon the parade, rather than be thus tamely roaſted to death: but Mr Holwell advanced, and found the Moors were only ſearching for a place to confine them in. At the time Mr Holwell might have made his eſcape, by the aſſiſtance of Mr Leech, the company's ſmith, who had eſcaped when the Moors entered the fort, and returned juſt as it was dark, to tell Mr Holwell he had provided a boat, and would enſure his eſcape, if he would follow him through a paſſage few were acquainted with, and by which he then entered. This might eaſily have been accompliſhed, as the guard took little notice of it; but Mr Holwell told Mr Leech, he was reſolved to ſhare the fate of the gentlemen and the garriſon; to which Mr Leech gallantly replied, that "then he was reſolved to ſhare Mr Holwell's fate, and would not leave him."

The guard on the parade advanced, and ordered them all to riſe and go into the barracks. Then, with their muſkets preſented, they ordered them to go into the Black Hole priſon; while others, with clubs and ſcimitars, preſſed upon them ſo ſtrong, that there was no reſiſting it; but, like one agitated wave impelling another, they were obliged to give way and enter; the reſt following like a torrent. Few among them, the ſoldiers excepted, had the leaſt idea of the dimenſions or nature of a place they had never ſeen; for if they had, they ſhould at all events have ruſhed upon the guard, and been cut to pieces by their own choice as the leſſer evil.

It was about eight o'clock when theſe 146 unhappy perſons, exhauſted by continual action and fatigue, were thus crammed together into a dungeon about eighteen feet ſquare, in a cloſe ſultry night in Bengal; ſhut up to the eaſt and ſouth, the only quarters from whence air could reach them, by dead walls, and by a wall and door to the north; open only to the weſt by two windows, ſtrongly barred with iron, from which they could receive ſcarce any circulation of freſh air.

They had been but few minutes confined before every one fell into a perſpiration ſo profuſe, that no idea can be formed of it. This brought on a raging thirſt, which increaſed in proportion as the body was drained of its moiſture. Various expedients were thought of to give more room and air. Every man was ſtripped, and every hat put in motion: they ſeveral times ſat down on their hams; but at each time ſeveral of the poor creatures fell, and were inſtantly ſuffocated or trode to death.

Before nine o'clock every man's thirſt grew intolerable, and reſpiration difficult. Efforts were again made to force the door; but ſtill in vain. Many inſults were uſed to the guards, to provoke them to fire in upon the priſoners, who grew outrageous, and many delirious. "Water, water," became the general cry. Some water was brought: but theſe ſupplies, like ſprinkling water on fire, only ſerved to raiſe and feed the flames. The confuſion became general and horrid from the cries and ravings for water; and ſome were trampled to death. This ſcene of miſery proved entertainment to the brutal wretches without, who ſupplied them with water, that they might have the ſatisfaction of ſeeing them fight for it, as they phraſed it; and held up lights to the bars, that they might loſe no part of the inhuman diverſion. Calcutta.

Before eleven o'clock, moſt of the gentlemen were dead, and one-third of the whole. Thirſt grew intolerable: but Mr Holwell kept his mouth moiſt by ſucking the perſpiration out of his ſhirt ſleeves, and catching the drops as they fell, like heavy rain, from his head and face. By half an hour after eleven, moſt of the living were in an outrageous delirium. They found that water heightened their uneaſineſs; and "Air, air," was the general cry. Every inſult that could be deviſed againſt the guard; all the opprobrious names that the viceroy and his officers could be loaded with, were repeated, to provoke the guard to fire upon them. Every man had eager hopes of meeting the firſt ſhot. Then a general prayer to heaven, to haſten the approach of the flames to the right and left of them, and put a period to their miſery. Some expired on others; while a ſteam aroſe as well from the living as the dead, which was very offenſive.

About two in the morning, they crowded ſo much to the windows, that many died ſtanding, unable to fall by the throng and equal preſſure round. When the day broke, the ſtench ariſing from the dead bodies was inſufferable. At that juncture, the ſoubah, who had received an account of the havock death had made among them, ſent one of his officers to inquire if the chief ſurvived. Mr Holwell was ſhown to him; and near ſix, an order came for their releaſe.

Thus they had remained in this infernal priſon from eight at night until ſix in the morning, when the poor remains of 146 ſouls, being only 23, came out alive; but moſt of them in a high putrid fever. The dead bodies were dragged out of the hole by the ſoldiers, and thrown promiſcuouſly into the ditch of an unfiniſhed ravelin, which was afterwards filled with earth.

The injuries which Calcutta ſuffered at this time, however, were ſoon repaired. The place was retaken by Admiral Watſon and Colonel Clive, early in 1737; Surajah Dowla was defeated, depoſed, and put to death; and Meer Jaffier, who ſucceeded him in the nabobſhip, engaged to pay an immenſe ſum for the indemnification of the inhabitants. Since that time, the immenſe acquiſition of territory by the Britiſh in this part of the world, with the conſtant ſtate of ſecurity enjoyed by this city, have given an opportunity of embelliſhing and improving it greatly beyond what it was before.—Among theſe improvements we may reckon that of Sir William Jones, who on the 15th of January 1784, inſtituted a ſociety for inquiring into the hiſtory civil and natural, the antiquities, arts, ſciences, and literature of Aſia; and thus the literature

Caldarium || Calder-wood.

of Europe, and along with it, it is to be hoped, the arts of humanity, beneficence, and peace, have at length obtained a footing in the rich empire of Indoſtan, ſo long a prey to the rapine and violence of tyrants and uſurpers.

CALDARIUM, in the ancient baths, denoted a brazen veſſel or ciſtern, placed in the hypocauſtum, full of hot water, to be drawn thence into the *piſcina* or bath, to give it the neceſſary degree of heat. In this ſenſe the *caldarium* ſtood contradiſtinguiſhed from the *tepidarium* and *frigidarium*.

CALDARIUM, alſo denoted the ſtove, or ſudatory, being a cloſe vaulted room, wherein by hot dry fumes, without water, people were brought to a profuſe ſweat. In which ſenſe, *caldarium* was the ſame with what was otherwiſe denominated *vaporarium*, *ſudatorium*, and *laconium*; in the Greek baths, *hypocauſtum*, ὑποκαυστον.

CALDERINUS, DOMITIUS, a learned critic, born at Calderia near Verona. He read lectures upon polite literature at Rome with great reputation; and was the firſt who ventured to write upon the moſt difficult of the ancient poets. He died very young in 1477.

CALDERON DE LA BARCA, DOM PEDRO, a Spaniſh officer, who after having ſignalized himſelf in the military profeſſion, quitted it for the eccleſiaſtical, and then commenced dramatic writer. His dramatic works make 9 vols. in 4to. and ſome Spaniſh authors have compared him to Shakeſpeare. He flouriſhed about the year 1640.

CALDERWOOD, DAVID, a famous divine of the church of Scotland, and a diſtinguiſhed writer in behalf of the Preſbyterians, was deſcended of a good family in that kingdom; and being early deſigned for the miniſtry, he applied with great diligence to the ſtudy of the Scriptures in their original tongues, the works of the fathers, the councils, and the beſt writers on church hiſtory. He was ſettled about the year 1604 at Crelling near Jedburgh. King James I. of Great Britain, being deſirous of bringing the church of Scotland nearer to a conformity with that of England, laboured earneſtly to reſtore the epiſcopal authority, and enlarge the powers of the biſhops who were then in Scotland. This deſign was very warmly oppoſed by many of the miniſters, and particularly by Mr David Calderwood; who, when Mr James Law, biſhop of Orkney, came to viſit the preſbyteries of Merſe and Tiviotdale, declined his juriſdiction by a paper under his hand dated May 5. 1608. But the king having its ſucceſs much at heart, ſent the earl of Dunbar, then high-treaſurer of Scotland, with Dr Abbot, afterward archbiſhop of Canterbury, and two other divines, into that kingdom, with inſtructions to employ every method to perſuade both the clergy and laity of his majeſty's ſincere deſire to promote the good of the church, and of his zeal for the Proteſtant religion. Mr Calderwood did not aſſiſt at the general aſſembly held at Glaſgow June 8. 1610, in which Lord Dunbar preſided as commiſſioner; and it appears from his writings, that he looked upon every thing tranſacted in it as null and void. In May following, King James went to Scotland; and on the 17th of June held a parliament at Edinburgh. At that time the clergy met in one of the churches, to hear and adviſe with the biſhops, which kind of aſſembly, it ſeems, was contrived in order to reſemble the Engliſh convocation. Mr Calderwood was preſent at it, but declared publicly that he did not take any ſuch meetings to reſemble a convocation; and being oppoſed by Dr Whitford and Dr Hamilton, who were friends to the biſhops, he took his leave of them in theſe words: "It is abſurd to ſee men ſitting in ſilks and ſatins, and to cry poverty in the kirk, when purity is departing." The parliament proceeded in the meanwhile in the deſpatch of buſineſs; and Mr Calderwood, with ſeveral other miniſters, being informed that a bill was depending to empower the king, with the advice of the archbiſhops, biſhops, and ſuch a number of the miniſtry as his majeſty ſhould think proper, to conſider and conclude as to matters decent for the external policy of the church, not repugnant to the word of God; and that ſuch concluſions ſhould have the ſtrength and power of eccleſiaſtical laws: againſt this they proteſted, for four reaſons. 1. Becauſe their church was ſo perfect, that, inſtead of needing reformation, it might be a pattern to others. 2. General aſſemblies, as now eſtabliſhed by law, and which ought always to continue, might by this means be overthrown. 3. Becauſe it might be a means of creating ſchiſm, and diſturb the tranquillity of the church. 4. Becauſe they had received aſſurances, that no attempts ſhould be made to bring them to a conformity with the church of England. They deſired therefore, that, for theſe and other reaſons, all thoughts of paſſing ſuch a law might be laid aſide: but in caſe this be not done, they proteſt for themſelves and their brethren who ſhall adhere to them, that they can yield no obedience to this law, when it ſhall be enacted, becauſe it is deſtructive of the liberty of the church; and therefore ſhall ſubmit to ſuch penalties, and think themſelves obliged to undergo ſuch puniſhments, as may be inflicted on them for diſobeying that law. This proteſt was ſigned by Mr Archibald Simſon on behalf of the members, who ſubſcribed another ſeparate roll, which he kept for his juſtification. This proteſt was preſented to the clerk regiſter, who refuſed to read it before the ſtates in parliament. However, though not read, it had its effect; for although the bill had the conſent of parliament, yet the king thought fit to cauſe it to be laid aſide, and not long after called a general aſſembly at St Andrew's. Soon after the parliament was diſſolved, and Mr Calderwood was ſummoned to appear before the high-commiſſion court at St Andrew's, on the 8th of July following, to anſwer for his mutinous and ſeditious behaviour. July 10th, the king came to that city in perſon; when Mr Calderwood, being called upon, and refuſing to comply with what the king in perſon required of him, was committed to priſon. Afterwards the privy council, according to the power exerciſed by them at that time, directed him to baniſh himſelf out of the king's dominions before Michaelmas next; and not to return without licenſe. Having applied to the king for a prorogation of his ſentence without ſucceſs, becauſe he would neither acknowledge his offence, nor promiſe conformity for the future, he retired to Holland, where, in 1623, he publiſhed his celebrated piece entitled *Altare Damaſcenum*. Mr Calderwood having in the year 1624 been afflicted with a long fit of ſickneſs, and nothing having been heard of him for ſome time, one Mr Patrick Scot, as Calderwood himſelf informs us, took it for granted that he

Calder-wood.

Caldron || Caledonia.

he was dead; and thereupon wrote a recantation in his name, as if, before his deceaſe, he had changed his ſentiments. This impoſture being detected, Scott went over to Holland, and ſtaid three weeks at Amſterdam, where he made a diligent ſearch for the author of Altare Damaſcenum, with a deſign to have deſpatched him. But Calderwood had privately retired into his own country where he lived ſeveral years. Scott gave out that the king had furniſhed him with the matter for the pretended recantation, and that he only put it in order. During his retirement, Mr Calderwood collected all the memorials relating to the eccleſiaſtical affairs of Scotland, from the beginning of the reformation there down to the death of King James; which collection is ſtill preſerved in the univerſity library of Glaſgow; that which was publiſhed under the title of "The True Hiſtory of Scotland," is only an extract from it. In the advertiſement prefixed to the laſt edition of his Altare Damaſcenum mention is made of his being miniſter of Pencaitland near Edinburgh in 1638, but we find nothing ſaid there, or anywhere elſe, of his death.

CALDRON, a large kitchen utenſil, commonly made of copper; having a moveable iron handle, whereby to hang it on the chimney hook. The word is formed from the French *chaudron*, or rather the Latin *caldarium*.

Boiling in CALDRONS (*caldariis decoquere*), is a capital puniſhment ſpoken of in the middle-age writers, decreed to divers ſort of criminals, but chiefly to debaſers of the coin. One of the torments inflicted on the ancient Chriſtian martyrs, was boiling in caldrons of water, oil, &c.

CALDWALL, RICHARD, a learned Engliſh phyſician, born in Staffordſhire about the year 1513. He ſtudied phyſic in Brazen-noſe College, Oxford; and was examined, admitted into, and made cenſor of, the College of Phyſicians at London, all in one day. Six weeks after he was choſen one of the elects; and in the year 1570, he was made preſident of that college. Mr Wood tells us, that he wrote ſeveral pieces in his profeſſion; but he does not tell us what they were, only that he tranſlated a book on the art of ſurgery, written by one Horatio More, a Florentine phyſician. We learn from Camden, that Caldwall founded a chirurgical lecture in the College of Phyſicians, and endowed it with a handſome ſalary. He died in 1585.

CALEA. See BOTANY *Index*.

CALEB, one of the deputies ſent by the Iſraelites to take a view of the land of Canaan. He made a good report of the country, and by this means revived the ſpirits of the dejected people; on which account, he and Joſhua were the only perſons who, after their leaving Egypt, ſettled in the land of Canaan. Caleb had for his ſhare the mountains and the city of Hebron, from which he drove three kings. Othniel his nephew having taken the city of Debir, Caleb gave him his daughter Achſah in marriage; and died, aged 114.

CALEDONIA, the ancient name of Scotland. From the teſtimonies of Tacitus, Dio, and Solinus, we find, that the ancient Caledonia comprehended all that country lying to the north of the rivers Forth and Clyde. In proportion as the Silures or Cimbri advanced towards the north, the Caledonians being circumſcribed within narrower limits, were forced to tranſmigrate into the iſlands which crowd the weſtern coaſts of Scotland. It is in this period, probably, we ought to place the firſt great migration of the Britiſh Gaël into Ireland; that kingdom being much nearer to the promontory of Galloway and Cantire, than many of the Scotiſh iſles are to the continent of North Britain. Caledonia.

To the country which the Caledonians poſſeſſed, they gave the name of *Caël-doch;* which is the only appellation the Scots, who ſpeak the Gaelic language, know for their own diviſion of Britain. *Caël-doch* is a compound, made up of *Gaël* or *Caël*, the firſt colony of the ancient Gauls who tranſmigrated into Britain, and *doch*, a diſtrict or diviſion of a country. The Romans, by tranſpoſing the letter *l* in *Cael*, and by ſoftening into a Latin termination the *ch* of *doch*, formed the well-known name of Caledonia.

When the tribes of North Britain were attacked by the Romans, they entered into aſſociations, that, by uniting their ſtrength, they might be more able to repel the common enemy. The particular name of that tribe, which either its ſuperior power or military reputation placed at the head of the aſſociation, was the general name given by the Romans to all the confederates. Hence it is that the *Mœatæ*, who with other tribes inhabited the diſtricts of Scotland lying ſouthward of the frith, and the *Caledonians*, who inhabited the weſt and north-weſt parts, have engroſſed all the glory which belonged in common, though in an inferior degree, to all the other nations ſettled of old in North Britain. It was for the ſame reaſon that the name of *Mœatæ* was entirely forgotten by foreign writers after the third century, and that of the *Caledonians* themſelves but ſeldom mentioned after the fourth.

Britons, *Caledonians*, *Mœatæ*, *Barbarians*, are the names conſtantly given to the old inhabitants of North Britain, by Tacitus, Herodian, Dio, Spartian, Vopiſcus, and other ancient writers. The ſucceſſors of theſe Britons, Caledonians, Mœats, and Barbarians, are called Picts, Scots, and Attacots, by ſome Roman writers of the fourth century.

The origin of the appellations *Scoti* and *Picti*, introduced by later Roman authors, has occaſioned much controverſy among the antiquarians of theſe days. The diſpute ſeems now to be fully decided by ſome learned critics of the preſent century, whoſe knowledge of the Gaelic language aſſiſted their inveſtigation. See SCOTLAND, PICTS, and HIGHLANDERS.

CALEDONIA, the name of a ſettlement made by the Scots on the weſt ſide of the gulf of Darien, in 1698; out of which they were ſtarved at the requeſt of the Eaſt India Company; for the Engliſh government prohibited the other colonies ſending them any proviſions; ſo they were obliged to leave it in 1700.

New CALEDONIA, an iſland in the South ſea, lately diſcovered by Captain Cook, and next to New Holland and New Zealand, is the largeſt iſland that hath yet been diſcovered in that ſea. It extends from 19. 37. to 22. 30. S. Lat. and from 163. 37. to 167. 14. E. Long. Its length from north-weſt to ſouth-eaſt is about 80 leagues: but its greateſt breadth does not exceed ten leagues. This iſland is diverſified with hills and valleys of various ſize and extent. From the hills iſſue abundance of rivulets, which contribute to fertilize the plains,

Caledonia. plains. Along its north-eaſt ſhore the land is flat; and being well watered, and cultivated by the inhabitants after their manner, appeared to great advantage to Captain Cook's people. Was it not, indeed, for thoſe fertile ſpots on the plains, the whole country might be called a *dreary waſte*: the mountains and higher parts of the land are in general incapable of cultivation. They conſiſt chiefly of rocks, many of which are full of mundic; the little ſoil that is upon them is ſcorched and burnt up by the ſun: it is, however, covered with coarſe graſs and other plants, and here and there covered with trees and ſhrubs. The country in general bears a great reſemblance to thoſe parts of New South Wales which lie under the ſame parallel of latitude. Several of its natural productions are the ſame, and the woods are without underwood as well as in that country. The whole coaſt ſeems to be ſurrounded by reefs and ſhoals, which render all acceſs to it extremely dangerous; but at the ſame time guard the coaſts againſt the attacks of the wind and ſea; rendering it eaſily navigable along the coaſt by canoes, and cauſing it abound with fiſh. Every part of the coaſt ſeems to be inhabited: the plantations in the plains are laid out with great judgment, and cultivated with much labour. They begin their cultivation by ſetting fire to the graſs, &c. with which the ground is covered, but have no notion of preſerving its vigour by manure; they, however, recruit it by letting it lie for ſome years untouched. On the beach was found a large irregular maſs of rock, not leſs than a cube of ten feet, conſiſting of a cloſe grained ſtone ſpeckled full of granites ſomewhat bigger than pins heads, from whence it ſeems probable that ſome valuable minerals may be found on this iſland. It differs from all the other iſlands yet diſcovered in the South ſea, by being entirely deſtitute of volcanic productions. Several plants of a new ſpecies were found here; and a few young bread-fruit trees, not then ſufficiently grown to bear fruit, ſeemed to have come up without culture; plantains and ſugar canes are here in ſmall quantity, and the cocoa-nut trees are ſmall and thinly planted. A new ſpecies of paſſion flower was likewiſe met with, which was never known to grow wild anywhere but in America. Several *Caputi* (MELALEUCA) trees were alſo found in flower. Muſquetos here are very numerous. A great variety of birds was ſeen of different claſſes, which were for the moſt part entirely new; particularly a beautiful ſpecies of parrot before unknown to zoologiſts. A new ſpecies of fiſh, of the genus called by Linnæus *tetraodon*, was caught here; and its liver, which was very large, preſented at ſupper. Several ſpecies of this genus being reckoned poiſonous, and the preſent ſpecies being remarkably ugly, Meſſ. Forſters hinted their ſuſpicions of its quality; but the temptation of a freſh meal, and the aſſurances of Captain Cook that he had formerly eaten this identical ſort of fiſh without harm, got the better of their ſcruples, and they ate of it. Its oilineſs, however, though it had no other bad taſte than what proceeded from this, prevented them from taking more than a morſel or two. In a few hours after they had retired to reſt, they were awaked by very alarming ſymptoms, being all ſeized with an extreme giddineſs; their hands and feet were numbed, ſo that they were ſcarcely able to crawl; and a violent languor and oppreſſion ſeized them. Emetics were adminiſtered with ſome ſucceſs, but ſudorifics gave the greateſt relief. Some dogs who had eaten the remainder of the liver were likewiſe taken ill; and a pig which had eaten the entrails died ſoon after, having ſwelled to an unuſual ſize. The effects of this poiſon on the gentlemen did not entirely go off in leſs than ſix weeks.—Abundance of turtle was ſeen here. The natives had not the leaſt notion of goats, hogs, dogs, or cats, and had not even a name for any of them Caledonia.

The inhabitants are very ſtout, tall, and in general well proportioned; their features mild; their beards and hair black, and ſtrongly frizzled, ſo as to be ſomewhat woolly in ſome individuals: their colour is ſwarthy, or a dark cheſnut brown. A few were ſeen who meaſured ſix feet four inches. They are remarkably courteous, not at all addicted to pilfering and ſtealing: in which character of honeſty they are ſingular, all the other nations in the South ſea being remarkably thieviſh. Some wear their hair long, and tie it up to the crown of their heads; others ſuffer only a large lock to grow on each ſide, which they tie up in clubs; many others, as well as all the women, wear it cropt ſhort. They make uſe of a kind of comb made of ſticks of hard wood, from ſeven to nine or ten inches long, and about the thickneſs of knitting needles; a number of theſe, ſeldom exceeding 20, but generally fewer, are faſtened together at one end, parallel to and near one-tenth of an inch from each other: the ends, which are a little pointed, will ſpread out or open like the ſticks of a fan. Theſe combs they always wear in their hair on one ſide of their head. Some had a kind of concave cylindrical ſtiff black cap, which appeared to be a great ornament among them, and was ſuppoſed to be worn only by the chiefs and warriors. A large ſheet of ſtrong paper, whenever they got one in exchange, was commonly applied to this purpoſe. The men go naked; only tying a ſtring round their middle, and another round their neck. A little piece of a brown cloth made of the bark of a fig tree, ſometimes tucked up to the belt, and ſometimes pendulous, ſcarcely deſerves the name of a covering; nor indeed does it ſeem at all intended for that purpoſe. This piece of cloth is ſometimes of ſuch a length, that the extremity is faſtened to the ſtring round the neck; to this ſtring they likewiſe hang ſmall round beads of a pale green nephritic ſtone. Coarſe garments were ſeen among them made of a ſort of matting; but they ſeemed never to wear them, except when in their canoes and unemployed. The women ſeemed to be in a ſervile ſtate: they were the only perſons of the family who had any employment, and ſeveral of them brought bundles of ſticks and fuel on their backs; thoſe who had children carried them on their backs in a kind of ſatchel. The women alſo were ſeen to dig up the earth in order to plant it. They are in general of a dark cheſnut, and ſometimes mahogany brown; their ſtature middle-ſized, ſome being rather tall, and their whole form rather ſtout and ſomewhat clumſy. Their dreſs is the moſt diſfiguring that can be imagined, and gives them a thick ſquat ſhape; it is a ſhort petticoat or fringe, conſiſting of filaments or little cords, about eight inches long, which are faſtened to a very long ſtring, which they have tied ſeveral times round their waiſt. The filaments, or little ropes, therefore, lie above each other in ſeveral layers, forming a kind of

Caledonia. thick thatch all round the body, but which does not near cover the thigh; these filaments were sometimes dyed black; but frequently those on the outside only were of that colour, the rest being of a dirty gray. There was not a single instance, during the ship's stay in this island, of the women permitting any indecent familiarity with an European: they took pleasure in practising the arts of a jilting coquette, but never became absolute wantons. The general ornaments of both sexes are ear-rings of tortoise shells; necklaces, or amulets, made of both shells and stones; and bracelets made of large shells, which they wear above the elbows.

The houses, or huts, in New Caledonia, are circular, something like a bee-hive, and full as close and warm; the entrance is by a small door, or long square hole, just big enough to admit a man bent double: the side walls are about four feet and a half high; but the roof is lofty, and peaked to a point at the top, above which is a post or stick of wood, which is generally ornamented either with carving or shells, or both. The framing is of small spars, reeds, &c. and both sides and roof are thick, and close covered with thatch made of coarse long grass. In the inside of the house are set up posts, to which cross spars are fastened, and platforms made for the conveniency of laying any thing on. Some houses have two floors, one above another; the floor is laid with dried grass, and here and there mats are spread for the principal people to sit or sleep on. In these houses there was no passage for the smoke but through the door: they were intolerably smoky, and so hot as to be insupportable to those unaccustomed to them: probably the smoke is intended to drive out the musquetos which swarm here. They commonly erect two or three of these huts near each other under a cluster of lofty fig trees, whose leaves are impervious to the rays of the sun.

The canoes used here are very heavy clumsy vessels; they are made of two trees hollowed out, having a raised gunnel about two inches high, and closed at each end with a bulk head of the same height; so that the whole is like a long square trough about three feet shorter than the body of the canoe. Two canoes thus fitted are fastened to each other about three feet asunder, by means of cross spars, which project about a foot over each side. Over these is laid a deck or heavy platform made of plank and small round spars, on which they have a fire-hearth, and generally a fire burning; they are navigated by one or two latteen sails, extended to a small latteen yard, the end of which is fixed in a notch or hole in the deck.

Notwithstanding the inoffensive disposition of the inhabitants of New Caledonia, they are well provided with offensive weapons; as clubs, spears, darts, and slings for throwing stones. Their clubs are about two feet and a half long, and variously formed; some like a scythe, others like a pick-axe; some have a head like a hawk, and others have round heads; but all are neatly made; many of their darts and spears are no less neat and ornamented with carvings. The slings are as simple as possible; but they take some pains to form the stones that they use into a proper shape, which is something like an egg, supposing both ends to be like the small one. They drive the dart by the assistance of short cords knobbed at one end and looped at the other, called by the seamen *beckets*. These contain a quantity of red wool taken from the vampyre, or great Indian bat. Bows and arrows are wholly unknown among them. Caledonia || Calendarium.

Their language bears no affinity to that spoken in the other South sea islands, the word *arrekee* and one or two more excepted. This is the more extraordinary, as different dialects of one language were spoken not only in the easterly islands, but at New Zealand.

A musical instrument, a kind of whistle, was procured here. It was a little polished piece of brown wood about two inches long, shaped like a kind of bell, though apparently solid, with a rope fixed at the small end; two holes were made in it near the base, and another near the insertion of the rope, all which communicated with each other; and by blowing in the uppermost, a shrill sound like whistling was produced: no other instrument was seen among them that had the least relation to music.

Many of the New Caledonians were seen with prodigiously thick legs and arms, which seemed to be affected with a kind of leprosy; the swelling was found to be extremely hard, but the skin was not alike harsh and scaly in all those who were afflicted with the disorder. The preternatural expansion of the arm or leg did not appear to be a great inconvenience; and they seemed to intimate that they very rarely felt any pain in it; but in some the disorder began to form blotches, which are marks of a great degree of virulence. This disease is probably *elephantiasis*.

Here they bury their dead in the ground. The grave of a chief who had been slain in battle here resembled a large mole-hill, and was decorated with spears, darts, paddles, &c. all stuck upright in the ground round about it. Lieutenant Pickersgill was showed a chief whom they named *Tea-booma*, and styled their *arrekee* or *king*; but nothing further is known of their government, and nothing at all of their religion.

CALEFACTION, the production of heat in a body from the action of fire, or that impulse impressed by a hot body on others around it. This word is used in pharmacy, by way of distinction from *coction*, which implies boiling; whereas calefaction is only heating a thing.

CALENBERG, a castle of Germany, in the duchy of Brunswick and principality of Calenberg. It is seated on the river Leine, and is 15 miles south of Hanover. It is subject to the duke of Brunswick Lunenberg, elector of Hanover, and king of Great Britain. E. Long. 9. 43. N. Lat. 52. 20.

CALENBERG, a principality of Lower Saxony, and one of the three parts of the duchy of Brunswick, is bounded on the north by the duchy of Verden, on the east by the principality of Zell, on the south by the principalities of Grubenhagen and Wolfenbuttle, and on the west by Westphalia. It belongs to the elector of Hanover.

CALENDAR, in *Astronomy* and *Chronology*. See KALENDAR.

CALENDAR of prisoners, in *Law*, a list of all the prisoners names in the custody of each respective sheriff*.

CALENDARIUM FLORÆ, in *Botany*, a calendar containing

* See the article *Execution*.

Calender, Calenders.

containing an exact regiſter of the reſpective times in which the plants of any given province or climate germinate, expand, and ſhed their leaves and flowers, or ripen and diſperſe their ſeeds. For particulars on this curious ſubject, ſee the articles DEFOLIATIO, EFFLORESCENTIA, FRONDESCENTIA, FRUCTESCENTIA, and GERMINATIO.

CALENDER, a machine uſed in manufactories to preſs certain woollen and ſilken ſtuffs and linens, to make them ſmooth, even, and gloſſy, or to give them waves, or water them, as may be ſeen in mohairs and tabbies. This inſtrument is compoſed of two thick cylinders or rollers, of very hard and well poliſhed wood, round which the ſtuffs to be calendered are wound: theſe rollers are placed croſs-wiſe between two very thick boards, the lower ſerving as a fixed baſe, and the upper moveable by means of a thick ſcrew with a rope faſtened to a ſpindle, which makes its axis: the uppermoſt board is loaded with large ſtones weighing 20,000lb. or more. At Paris they have an extraordinary machine of this kind, called the *royal calender*, made by order of M. Colbert. The lower table or plank is made of a block of ſmooth marble, and the upper is lined with a plate of poliſhed copper. The alternate motion of the upper board ſometimes one way and ſometimes another, together with the prodigious weight laid upon it, gives the ſtuffs their gloſs and ſmoothneſs; or gives them the waves, by making the cylinders on which they are put roll with great force over the undermoſt board. When they would put a roller from under the calender, they only incline the undermoſt board of the machine. The dreſſing alone, with the many turns they make the ſtaffs and linens undergo in the calender, gives the waves, or waters them, as the workmen call it. It is a miſtake to think, as ſome have aſſerted, and Mr Chambers among others, that they uſe rollers with a ſhallow indenture or engraving cut in them.

CALENDER *of Monteith*, a diſtrict in the ſouth-weſt corner of Perthſhire in Scotland, from which a branch of the ancient family of Livingſtone had the title of earl. The chief ſeat of the family near Falkirk is alſo called *Calender*. Both eſtate and title were forfeited in conſequence of the poſſeſſor being engaged in the rebellion 1715.

CALENDERS, a ſort of Mahometan friars, ſo called from Santon Calenderi their founder. This Santon went bareheaded, without a ſhirt, and with the ſkin of a wild beaſt thrown over his ſhoulders. He wore a kind of apron before, the ſtrings of which were adorned with counterfeit precious ſtones. His diſciples are rather a ſect of epicures than a ſociety of religious. They honour a tavern as much as they do a moſque; and think they pay as acceptable worſhip to God by the free uſe of his creatures, as others do by the greateſt auſterities and acts of devotion. They are called, in Perſia and Arabia, *Abdals*, or *Abdallat*, i. e. perſons conſecrated to the honour and ſervice of God. Their garment is a ſingle coat, made up of a variety of pieces, and quilted like a rug. They preach in the market places, and live upon what their auditors beſtow on them. They are generally very vitious perſons: for which reaſon they are not admitted into any houſes.

CALENDS, in Roman antiquity. See KALENDS.

Calends || Calf.

CALENDULA, the MARIGOLD. See BOTANY *Index*.

CALENTIUS, ELISIUS, a Neapolitan poet and proſe author. He was preceptor to Frederick the ſon of Ferdinand king of Naples, and the earlieſt writer on the illegality of putting criminals to death, except for murder. He died in 1503.

CALENTURE, a feveriſh diſorder incident to ſailors in hot countries; the principal ſymptom of which is their imagining the ſea to be green fields: hence, attempting to walk abroad in theſe imaginary places of delight, they are frequently loſt. Vomiting, bleeding, a ſpare diet, and the neutral ſalts, are recommended in this diſorder; a ſingle vomit commonly removing the delirium, and the cooling medicines completing the cure.

CALEPIN, AMBROSIUS, an Auguſtine monk of Calepio, whence he took his name, in the 16th century. He is author of a dictionary of eight languages, ſince augmented by Paſſerat and others.

CALES, in *Ancient Geography*, a municipal city of ſome note in Campania, at no great diſtance from Caſilinum. The epithet *Calenus* is by Horace and Juvenal applied to a generous wine which the territory produced.

CALETES, in *Ancient Geography*, a people of Gallia Celtica, on the confines of Belgica, ſituated between the ſea and the Sequana. Now called *le Paix de Caux*, in Normandy.

CALETURE, a fort on the iſland of Ceylon, at the mouth of a river of the ſame name. The Dutch became maſters of it in 1655; but were afterwards obliged to leave it. E. Long. 80. 51. N. Lat. 6. 38.

CALF, in *Zoology*, the young of the ox kind.

There are two ways of breeding calves that are intended to be reared. The one is to let the calf run about with its dam all the year round; which is the method in the cheap breeding countries, and is generally allowed to make the beſt cattle. The other is to take them from the dam after they have ſucked about a fortnight: they are then to be taught to drink flat milk, which is to be made but juſt warm for them, it being very dangerous to give it them too hot. The beſt time of weaning calves is from January to May: they ſhould have milk for 12 weeks after; and a fortnight before that is left off, water ſhould be mixed with the milk in larger and larger quantities. When the calf has been fed on milk for about a month, little wiſps of hay ſhould be placed all about him in cleft ſticks to induce him to eat. In the beginning of April they ſhould be turned out to graſs; only for a few days they ſhould be taken in for the night, and have milk and water given them: the ſame may alſo be given them in a pail ſometimes in the field, till they are ſo able to feed themſelves that they do not regard it. The graſs they are turned into muſt not be too rank, but ſhort and ſweet, that they may like it, and yet get it with ſome labour. Calves ſhould always be weaned at graſs; for if it be done with hay and water, they often grow big-bellied on it, and are apt to rot. When thoſe among the males are ſelected which are to be kept as bulls, the reſt ſhould be gelt for oxen: the ſooner the better. Between 10 and 20 days is a proper

Calf. per age. About London almoſt all the calves are fatted for the butcher. The reaſon of this is, that there is a good market for them; and the lands there are not ſo profitable to breed upon as in cheaper countries. The way to make calves fat and fine is, the keeping them very clean: giving them freſh litter every day: and the hanging a large chalk ſtone in ſome corner where they can eaſily get at it to lick it, but where it is out of the way of being fouled by their dung and urine. The coops are to be placed ſo as not to have too much ſun upon them, and ſo high above the ground that the urine may run off. They alſo bleed them once when they are a month old, and a ſecond time before they kill them; which is a great addition to the beauty and whiteneſs of their fleſh: the bleeding is by ſome repeated much oftener, but this is ſufficient. Calves are very apt to be looſe in their bowels; which waſtes and very much injures them. The remedy is to give them chalk ſcraped among milk, pouring it down with a horn. If this does not ſucceed, they give them bole armenic in large doſes, and uſe the cold bath every morning. If a cow will not let a ſtrange calf ſuck her, the common method is to rub both her noſe and the calf's with a little brandy; this generally reconciles them after a few ſmellings.

Golden Calf, an idol ſet up and worſhipped by the Iſraelites at the foot of Mount Sinai, in their paſſage through the wilderneſs to the land of Canaan. Our verſion makes Aaron faſhion this calf with a graving tool after he had caſt it in a mould: the Geneva tranſlation makes him engrave it firſt, and caſt it afterwards. Others, with more probability, render the whole verſe thus: "And Aaron received them (the golden earrings), and tied them up in a bag, and got them caſt into a molten calf:" which verſion is authoriſed by the different ſenſes of the word *tzur*, which ſignifies to tie up or bind, as well as to ſhape or form; and of the word *cherret*, which is uſed both for a graving tool and a bag. Some of the ancient fathers have been of opinion that this idol had only the face of a calf, and the ſhape of a man from the neck downwards, in imitation of the Egyptian Iſis. Others have thought it was only the head of an ox without a body. But the moſt general opinion is, that it was an entire calf in imitation of the Apis worſhipped by the Egyptians; among whom, no doubt, the Iſraelites had acquired their propenſity to idolatry. This calf Moſes is ſaid to have *burnt with fire*, reduced to powder, and ſtrewed upon the water which the people were to drink. How this could be accompliſhed hath been a queſtion. Moſt people have thought, that as gold is indeſtructible, it could only be burnt by the miraculous power of God; but M. Stahl conjectures that Moſes diſſolved it by means of liver of ſulphur *. The Rabbins tell us that the people were made to drink of this water in order to diſtinguiſh the idolaters from the reſt; for that as ſoon as they had drunk of it, the beards of the former turned red. The Cabbaliſts add, that the calf weighed 125 quintals; which they gather from the Hebrew word *maſſekah*, whoſe numerical letters make 125.

* See *Chemiſtry Index*.

Calfs Skins, in the leather manufacture, are prepared and dreſſed by the tanners, ſkinners, and curriers, who ſell them for the uſe of the ſhoemakers, ſaddlers, bookbinders, and other artificers, who employ them in their ſeveral manufactures. Cali. Caliber.

Calf-Skin dreſſed in ſumach, denotes the ſkin of this animal curried black on the hair ſide, and dyed of an orange colour on the fleſh ſide, by means of ſumach, chiefly uſed in the making of belts.

The Engliſh calf-ſkin is much valued abroad, and the commerce thereof very conſiderable in France and other countries; where divers attempts have been made to imitate it, but hitherto in vain. What is like to baffle all endeavours for imitating the Engliſh calf in France is, the ſmallneſs and weakneſs of the calves about Paris; which at 15 days old are not ſo big as the Engliſh ones when they come into the world.

Sea Calf. See Phoca, Mammalia *Index*.

CALI, a town of Popayan in South America, ſeated in a valley of the ſame name on the river Cauca. The governor of the province uſually reſides there. W. Long. 78. 5. N. Lat. 3. 15.

CALIBER, or Calliper, properly denotes the diameter of any body; thus we ſay, two columns of the ſame caliber, the caliber of the bore of a gun, the caliber of a bullet, &c.

Caliber Compaſſes, a ſort of compaſſes made with arched legs to take the diameter of round or ſwelling bodies. See Compasses.

Caliber compaſſes are chiefly uſed by gunners for taking the diameters of the ſeveral parts of a piece of ordnance, or of bombs, bullets, &c. Their legs are therefore circular; and move on an arch of braſs, whereon is marked the inches and half inches, to ſhow how far the points of the compaſſes are opened aſunder.

Some are alſo made for taking the diameter of the bore of a gun or mortar.

The gaugers alſo ſometimes uſe calibers, to embrace the two heads of any caſk, in order to find its length.

The caliber uſed by carpenters and joiners, is a piece of board notched triangular-wiſe in the middle for the taking of meaſure.

Caliber Rule, or *Gunners Callipers*, is an inſtrument wherein a right line is ſo divided as that the firſt part being equal to the diameter of an iron or leaden ball of one pound weight, the other parts are to the firſt as the diameters of balls of two, three, four, &c. pounds are to the diameter of a ball of one pound. The caliber is uſed by engineers, from the weight of the ball given, to determine its diameter or caliber, or *vice verſa*.

The gunners callipers conſiſt of two thin plates of braſs joined by a rivet, ſo as to move quite round each other: its length from the centre of the joint is between ſix inches and a foot, and its breadth from one to two inches; that of the moſt convenient ſize is about nine inches long. Many ſcales, tables, and proportions, &c. may be introduced on this inſtrument; but none are eſſential to it, except thoſe for taking the caliber of ſhot and cannon, and for meaſuring the magnitude of ſaliant and entering angles. The moſt complete callipers is exhibited Plate CXXXIII. the furniture and uſe of which we ſhall now briefly deſcribe. Let the four faces of this inſtrument be diſtinguiſhed by the letters A, B, C, D: A and D conſiſt

Caliber. of a circular head and leg; B and C conſiſt only of a leg.

On the circular head adjoining to the leg of the face A are diviſions denominated *ſhot diameters;* which ſhow the diſtance in inches and tenths of an inch of the points of the callipers when they are opened; ſo that if a ball not exceeding ten inches be introduced between them, the bevil edge E marks its diameter among theſe diviſions.

On the circular bevil part E of the face B is a ſcale of diviſions diſtinguiſhed by *lb. weight of iron ſhot.* When the diameter of any ſhot is taken between the points of the callipers, the inner edge of the leg A ſhows its weight in avoirdupois pounds, provided it be lib. $\frac{1}{2}$, 1, $1\frac{1}{2}$, 2, 3, 4, $5\frac{1}{4}$, 6, 8, 9, 12, 16, 18, 24, 26, 32, 36, or 42; the figures neareſt the bevil edge anſwering to the ſhort lines in the ſcale, and thoſe behind them to the longer ſtrokes. This ſcale is conſtructed on the following geometrical theorem, viz. that the weights of ſpheres are as the cubes of their diameters.

On the lower part of the circular head of the face A is a ſcale of diviſions marked *bores of guns*; for the uſe of which, the legs of the callipers are ſlipped acroſs each other, till the ſteel points touch the concave ſurface of the gun in its greateſt breadth; then the bevil edge F of the face B will cut a diviſion in the ſcale ſhowing the diameter of the bore in inches and tenths.

Within the ſcales of *ſhot* and *bore* diameters on the circular part of A, are diviſions marked *pounders:* the inner figures $\frac{1}{2}$, $1\frac{1}{2}$, 3, $5\frac{1}{4}$, 8, 12, 18, 26, 36, correſpond to the longeſt lines; and the figures, 1, 2, 4, 6, 9, 16, 24, 32, 42, to the ſhort ſtrokes. When the bore of a gun is taken between the points of the callipers, the bevil edge F will either cut or be near one of theſe diviſions, and ſhow the weight of iron ſhot proper for that gun.

On the upper half of the circular head of the face A are three concentric ſcales of degrees; the outer ſcale conſiſting of 180 degrees numbered from right to left, 10, 20, &c. the middle numbered the contrary way, and the outer ſcale beginning at the middle, with 0, and numbered on each ſide to 90 degrees. Theſe ſcales ſerve to take the quantity of an angle, either entering or ſaliant. For an entering or internal angle, apply the legs of the callipers ſo that its outward edges coincide with the legs of the given angle, the degree cut by the bevil edge F in the outer ſcale ſhows the meaſure of the angle ſought: for a ſaliant or external angle, ſlip the legs of the callipers acroſs each other, ſo that their outward edges may coincide with the legs forming the angle, and the degree marked on the middle ſcale by the bevil edge E will ſhow the meaſure of the angle required. The inner ſcale will ſerve to determine the elevation of cannon and mortars, or of any oblique plane. Let one end of a thread be fixed into the notch on the plate B, and any weight tied to the other end: apply the ſtraight ſide of the plate A to the ſide of the body whoſe inclination is ſought; hold it in this poſition, and move the plate B, till the thread falls upon the line near the centre marked *perp.* Then will the bevil edge F cut the degrees on the inner ſcale, ſhowing the inclination of that body to the horizon.

On the face C near the point of the callipers is a little table ſhowing the proportion of troy and avoirdupois weights, by which one kind of weight may be eaſily reduced into another. Caliber.

Near the extreme of the face D of the callipers are two tables ſhowing the proportion between the pounds weight of London and Paris, and alſo between the lengths of the foot meaſure of England and France.

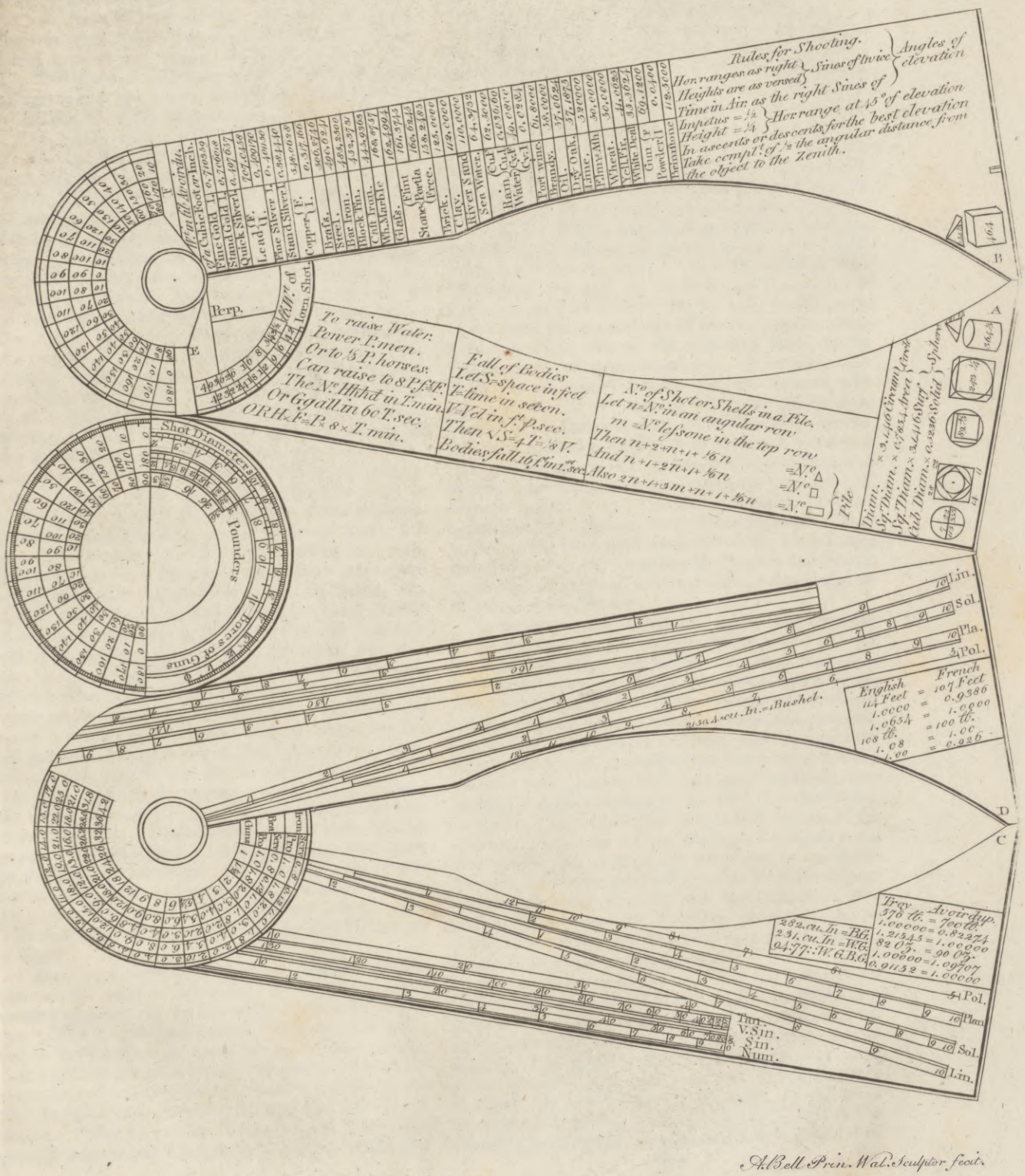
Near the extreme on the face A is a table containing four rules of the circle and ſphere; and geometrical figures with numbers annexed to them: the firſt is a circle including the proportion in round numbers of the diameter to its circumference; the ſecond is a circle, inſcribed in a ſquare, and a ſquare within that circle, and another circle in the inner ſquare: the numbers 28, 22, above this figure exhibit the proportion of the outward ſquare to the area of the inſcribed circle; and the numbers 14, 11, below it, ſhow the proportion between the area of the inſcribed ſquare and the area of its inſcribed circle. The third is a cube inſcribed in a ſphere; and the number $89\frac{1}{7}$ ſhows that a cube of iron, inſcribed in a ſphere of 12 inches in diameter, weighs $89\frac{1}{7}$. The fourth is a ſphere in a cube, and the number 243 expreſſes the weight in pounds of a ſphere inſcribed in a cube whoſe ſide is 12 inches: the fifth repreſents a cylinder and cone of one foot diameter and height: the number in the cylinder ſhows, that an iron cylinder of that diameter and height weighs 364.5lb. and the number 121.5 in the cone expreſſes the weight of a cone, the diameter of whoſe baſe is 12 inches, and of the ſame height: the ſixth figure ſhows that an iron cube, whoſe ſide is 12 inches, weighs 464lb. and that a ſquare pyramid of iron, whoſe baſe is a ſquare foot and height 12 inches, weighs $154\frac{2}{3}$lb. The numbers which have been hitherto fixed to the four laſt figures were not ſtrictly true; and therefore they have been corrected in the figure here referred to; and by theſe the figures on any inſtrument of this kind ſhould be corrected likewiſe.

On the leg B of the callipers, is a table ſhowing the weights of a cubic inch or foot of various bodies in pounds avoirdupois.

On the face D of the circular head of the callipers is a table contained between five concentric ſegments of rings: the inner one marked *Guns* ſhows the nature of the gun or the weight of ball it carries; the two next rings contain the quantity of powder uſed for proof and ſervice to braſs guns, and the two outermoſt rings ſhow the quantity for proof and ſervice in iron cannon.

On the face A is a table exhibiting the method of computing the *number of ſhot or ſhells* in a triangular, ſquare, or rectangular pile. Near this is placed a table containing the principal rules relative to the *fall of bodies*, expreſſed in an algebraic manner: nearer the centre we have another table of rules for raiſing water, calculated on the ſuppoſition, that one horſe is equal in this kind of labour to five men, and that one man will raiſe a hogſhead of water to eight feet of height in one minute, and work at that rate for ſome hours. N. B. Hogſheads are reckoned at 60 gallons.

Some of the leading principles in gunnery, relating to *ſhooting* in cannon and mortars, are expreſſed on the face B of the callipers. Beſides the articles already enumerated,



A. Bell Prin. Wal. Sculptor fecit.

Calicoulan || Calidæ plantæ.

enumerated, the ſcales uſually marked on this ſector are laid down on this inſtrument: thus the line of inches is placed on the edge of the callipers, or on the ſtraight borders of the faces C, D: the logarithmic ſcales of numbers, ſines, verſed ſines, and tangents, are placed along theſe faces near the ſtraight edges: the line of lines is placed on the ſame faces in an angular poſition, and marked *Lin.* The lines of planes or ſuperfices are alſo exhibited on the faces C and D, tending towards the centre, and marked *Plan.* Finally, The lines of ſolids are laid on the ſame faces tending towards the centre, and diſtinguiſhed by *Sol.*

CALICOULAN, or QUILLON, a town of Aſia, in the Eaſt Indies, on the coaſt of Malabar, and in the peninſula on this ſide the Ganges, where the Dutch have a factory. E. Long. 75. 21. N. Lat. 9. 5.

CALICUT, a kingdom of India, on this ſide the Ganges, upon the coaſt of Malabar. It is about 63 miles long, and as much broad. It has many woods, rivers, and marſhes, and is very populous; but does not produce much corn, abundance of rice being imported from Canara. The land along the ſea coaſt is low and ſandy, and produces a number of cocoa trees. The higher grounds produce pepper and cardamoms of a very good quality. They have likewiſe timber for building, white and yellow ſanders, caſſia lignea, caſſia fiſtula, nux vomica, and cocculus indicus. The woods abound with parrots and monkeys, as well as different kinds of game. They have alſo plenty of fiſh, ſeveral ſorts of medicinal drugs, and their mountains produce iron. The *ſamorin*, or king, of Calicut, was once maſter of all the coaſt of Malabar; but at his death, he left it by will among four of his nephews. He who governs Calicut has a palace of ſtone, and there is ſome appearance of grandeur about his court. He carries on a conſiderable trade, which makes the people of Calicut richer than their neighbours. In former times they had ſeveral ſtrange cuſtoms, ſome of which are ſtill kept up; particularly the ſamorin's wife muſt be firſt enjoyed by the high-prieſt, who may have her three nights if he pleaſes. The nobles permit the other prieſts to take the ſame liberty, but the lower people cannot have that honour. A woman may marry a number of huſbands; each of whom has her ten days or more by turns, as they agree among themſelves; and provide her all things neceſſary during that time. When ſhe proves with child, ſhe names the father: who, after the child is weaned, takes care of its education. Theſe people have no pens, ink, or paper; but write with a bodkin on flags that grow by the ſides of the rivers. By this means the letters are in ſome ſenſe engraved; and ſo tough are the flags, that they will laſt for a great number of years. This was the firſt land diſcovered by the Portugueſe in 1498.

CALICUT, a town of Aſia, in the kingdom of that name on the coaſt of Malabar. It contains a great number of mean low houſes, each of which has a garden. The Engliſh had a factory here, but it is removed to Tellichery. E. Long. 76. 4. N. Lat. 11. 21.

CALIDÆ PLANTÆ (from *calor*, heat); plants that are natives of warm climates. Such are thoſe of the Eaſt Indies, South America, Egypt, and the Canary iſlands. Theſe plants, ſays Linnæus, will bear a degree of heat which is as 40 on a ſcale in which the freezing point is 0, and 100 the heat of boiling water. In the 10th degree of cold, they ceaſe to grow, loſe their leaves, become barren, are ſuffocated, and periſh.

Caliduct, California.

CALIDUCT, in *Antiquity*, a kind of pipes or canal diſpoſed along the walls of houſes or apartments, uſed by the ancients for conveying heat to ſeveral remote parts of the houſe from one common furnace.

CALIFORNIA, the moſt northerly of all the Spaniſh dominions on the continent of America, is ſometimes diſtinguiſhed by the name of *New Albion*, and the *Iſlas Carrabiras;* but the moſt ancient appellation is *California;* a word probably owing to ſome accident, or to ſome words ſpoken by the Indians and miſunderſtood by the Spaniards. For a long time California was thought to be an iſland; but Father Caino, a German Jeſuit, diſcovered it to be a peninſula joining to the coaſt of New Mexico and the ſouthern parts of America. The peninſula extends from Cape St Sebaſtian, lying in north latitude 43. 30. to Cape St Lucar which lies in north latitude 22. 32. It is divided from New Mexico by the gulf, or as ſome call it the *lake*, of California, or *Vermilion Sea*, on the eaſt; on the north, by that part of the continent of North America which is leaſt known; and on the weſt and ſouth, by the Pacific ocean or great South ſea. The coaſts, eſpecially towards the Vermilion ſea, are covered with inhabited iſlands, on ſome of which the Jeſuits have eſtabliſhed ſettlements, ſuch as St Clement, Paxaros, St Anne, Cedars (ſo called from the great number of theſe trees it produces), St Joſeph, and a multitude of others. But the iſlands beſt known are three lying off Cape St Lucar, towards the Mexican coaſt. Theſe are called *Les Tres Marias*, "the three Maries." They are ſmall, but have good wood and water, ſalt pits, and abundance of game; therefore the Engliſh and French pirates have ſometimes wintered there, when bound on cruiſes in the South ſeas.

As California lies altogether within the temperate zone, the natives are neither chilled with cold nor ſcorched with heat; and indeed the improvements in agriculture made by the Jeſuits afford ſtrong proofs of the excellency of the climate. In ſome places the air is extremely hot and dry; and the earth wild, rugged, and barren. In a country ſtretching about 800 miles in length, there muſt be conſiderable variations of ſoil and climate; and indeed we find, from good authority, that California produces ſome of the moſt beautiful lawns, as well as many of the moſt inhoſpitable deſerts, in the univerſe. Upon the whole, although California is rather rough and craggy, we are aſſured by the Jeſuit Vinegas, and other good writers, that with due culture it furniſhes every neceſſary and conveniency of life; and that, even where the atmoſphere is hotteſt, vapours riſing from the ſea, and diſperſed by pleaſant breezes, render it of a moderate temperature.

The peninſula of California is now ſtocked with all ſorts of domeſtic animals known in Spain and Mexico. Horſes, mules, aſſes, oxen, ſheep, hogs, goats, and all other quadrupeds imported, thrive and increaſe in this country. Among the native animals is a ſpecies of deer of the ſize of a young heifer, and greatly reſembling it in ſhape; the head is like that of a deer, and the horns thick and crooked like thoſe of a ram. The hoof of the animal is large, round, and cloven, the ſkin ſpotted, but

California. the hair thinner and the tail ſharper than thoſe of a deer. Its fleſh is greatly eſteemed. There is another animal peculiar to this country, larger and more bulky than a ſheep, but greatly reſembling it in figure, and like it, covered with a fine black or white wool. The fleſh of this animal is nouriſhing and delicious; and, happily for the natives, it is ſo abundant, that nothing more is required than the trouble of hunting, as theſe animals wander about in droves in the foreſts and on the mountains. Father Torquemado deſcribes a creature which he calls a *ſpecies of large bear*, ſomething like a buffalo, of the ſize of a ſteer, and nearly of the figure of a ſtag. Its hair is a quarter of a yard in length, its neck long and awkward, and on its forehead are horns branched like thoſe of a ſtag. The tail is a yard in length and half a yard in breadth; and the hoofs cloven like thoſe of an ox. With regard to birds, we have but an imperfect account; only, in general, Father Vinegas tells us that the coaſt is plentifully ſtored with peacocks, buſtards, geeſe, cranes, and moſt of the birds common in other parts of the world. The quantity of fiſh which reſort to theſe coaſts is incredible. Salmon, turbot, barbel, ſkate, mackerel, &c. are caught here with very little trouble; together with pearl oyſters, common oyſters, lobſters, and a variety of exquiſite ſhell fiſh. Plenty of turtle are alſo caught on the coaſts. On the South ſea coaſts are ſome ſhell fiſh peculiar to it, and perhaps the moſt beautiful in the world; their luſtre ſurpaſſing that of the fineſt pearl, and darting their rays through a tranſparent varniſh of an elegant vivid blue, like the lapis lazuli. The fame of California for pearls ſoon drew forth great numbers of adventurers, who ſearched every part of the gulf, and are ſtill employed in that work, notwithſtanding faſhion has greatly diminiſhed the value of this elegant natural production. Father Torquemado obſerves that the ſea of California affords very rich pearl fiſheries; and that the *boſtias*, or beds of oyſters, may be ſeen in three or four fathom water, almoſt as plain as if they were on the ſurface.

The extremity of the peninſula towards Cape St Lucar is more level, temperate, and fertile, than the other parts, and conſequently more woody. In the more diſtant parts, even to the fartheſt miſſions on the eaſt coaſt, no large timber hath yet been diſcovered. A ſpecies of manna is found in this country, which, according to the accounts of the Jeſuits, has all the ſweetneſs of refined ſugar without its whiteneſs. The natives firmly believe that this juice drops from heaven.

The Californians are well made, and very ſtrong. They are extremely puſillanimous, inconſtant, ſtupid, and even inſenſible, and ſeem extremely deſerving of the character given to the Indians in general, under the article AMERICA. Before the Europeans penetrated into California, the natives had no form of religion. The miſſionaries indeed tell us many tales concerning them, but they ſo evidently bear the marks of forgery as not to be worth repeating. Each nation was then an aſſemblage of ſeveral cottages more or leſs numerous, that were all mutually confederated by alliances, but without any chief. They were ſtrangers even to filial obedience. No kind of dreſs was uſed by the men; but the women made uſe of ſome coverings, and were even fond of ornamenting themſelves with pearls and ſuch other trinkets as the country afforded. California. What moſt diſplayed their ingenuity was the conſtruction of their fiſhing nets, which are ſaid by the Jeſuits to have even exceeded in goodneſs thoſe made in Europe. They were made by the women, of a coarſe kind of flax procured from ſome plants which grow there. Their houſes were built of branches and leaves of trees; nay, many of them were only encloſures of earth and ſtone, raiſed half a yard high, without any covering; and even theſe were ſo ſmall, that they could not ſtretch themſelves at length in them. In winter, they dwelt under ground in caves either natural or artificial.

In 1526, Ferdinand Cortez having reduced and ſettled Mexico, attempted the conqueſt of California; but was obliged to return, without even taking a ſurvey of the country, a report of his death having diſpoſed the Mexicans to a general inſurrection. Some other attempts were made by the officers of Cortez, but theſe were alſo unſucceſsful; and this valuable coaſt was long neglected by the Spaniards, who, to this day have but one ſettlement upon it. In 1595, a galleon was ſent to make diſcoveries on the Californian ſhore; but the veſſel was unfortunately loſt. Seven years after, the count de Monteroy, then viceroy of New Spain, ſent Sebaſtian Biſcayno on the ſame deſign with two ſhips and a tender; but he made no diſcovery of importance. In 1684, the marquis de Laguna, alſo viceroy of New Spain, deſpatched two ſhips with a tender to make diſcoveries on the lake of California. He returned with an indifferent account, but was among the firſt who aſſerted that California was not an iſland; which was afterwards confirmed by Father Caino, as already related. In 1697, the Spaniards being diſcouraged by their loſſes and diſappointments, the Jeſuits ſolicited and obtained permiſſion to undertake the conqueſt of California. They arrived among the ſavages with curioſities that might amuſe them, corn for their food, and clothes for which they could not but perceive the neceſſity. The hatred theſe people bore the Spaniſh name could not ſupport itſelf againſt theſe demonſtrations of benevolence. They teſtified their acknowledgments as much as their want of ſenſibility and their inconſtancy would permit them. Theſe faults were partly overcome by the religious inſtitutors, who purſued their project with a degree of warmth and reſolution peculiar to the ſociety. They made themſelves carpenters, maſons, weavers, and huſbandmen; and by theſe means ſucceeded in imparting knowledge, and in ſome meaſure a taſte for the uſeful arts, to this ſavage people, who have been all ſucceſſively formed into one body. In 1745, they compoſed 43 villages, ſeparated from each other by the barrenneſs of the ſoil and the want of water. The inhabitants of theſe ſmall villages ſubſiſt principally on corn and pulſe, which they cultivate; and on the fruits and domeſtic animals of Europe, the breeding of which laſt is an object of continual attention. The Indians have each their field, and the property of what they reap, but ſuch is their want of foreſight, that they would ſquander in a day what they had gathered, if the miſſionary did not take upon himſelf to diſtribute it to them as they ſtand in need of it. They manufacture ſome coarſe ſtuffs; and the neceſſaries they are in

Caliga || Caligula

in want of are purchaſed with pearls, and with wine nearly reſembling that of Madeira, which they ſell to the Mexicans and to the galleons, and which experience hath ſhown the neceſſity of prohibiting in California. A few laws, which are very ſimple, are ſufficient to regulate this riſing ſtate. In order to enforce them, the miſſionary chooſes the moſt intelligent perſon of the village; who is empowered to whip and impriſon; the only puniſhments of which they have any knowledge. In all California there are only two garriſons, each conſiſting of 30 men, and a ſoldier with every miſſionary. Theſe troops were choſen by the legiſlators, though they are paid by the government. Were the court of Madrid to puſh their intereſt with half the zeal of the Jeſuits, California might become one of the moſt valuable of their acquiſitions, on account of the pearls and other valuable articles of commerce which the country contains. At preſent the little Spaniſh town near Cape St Lucar is made uſe of for no other purpoſe than as a place of refreſhment for the Manilla ſhips, and the head reſidence of the miſſionaries.

CALIGA, in Roman antiquity, was the proper ſoldier's ſhoe, made in the ſandal faſhion, without upper leather to cover the ſuperior part of the foot, though otherwiſe reaching to the middle of the leg, and faſtened with thongs. The ſole of the caliga was of wood, like the ſabot of the French peaſants, and its bottom ſtuck full of nails; which clavi are ſuppoſed to have been very long in the ſhoes of the ſcouts and ſentinels; whence theſe were called by way of diſtinction, *caligæ ſpeculatoriæ;* as if by mounting the wearer to a higher pitch, they gave a greater advantage to the ſight: though others will have the *caligæ ſpeculatoriæ* to have been made ſoft and woolly, to prevent their making a noiſe. From theſe *caligæ* it was that the emperor Caligula took his name, as having been born in the army, and afterwards bred up in the habit of a common ſoldier.

According to Du Cange, a ſort of *caligæ* was alſo worn by monks and biſhops, when they celebrated maſs pontifically.

CALIGATI, an appellation given by ſome ancient writers to the common ſoldiers in the Roman armies, by reaſon of the caliga which they wore. The caliga was the badge or ſymbol of a ſoldier; whence to take away the caliga and belt, imported a diſmiſſing or caſhiering.

CALIGO, or CALIGATIO, in *Medicine*, an opacity, or cloudineſs of the anterior ſurface of the cryſtaline lens of the eye, cauſing a dimneſs or ſuffuſion of ſight.

CALIGULA, the Roman emperor and tyrant, A. D. 37, began his reign with every promiſing appearance of becoming the real father of his people; but at the end of eight months he was ſeized with a fever, which, it is thought, left a frenzy on his mind: for his diſpoſition totally changed, and he committed the moſt atrocious acts of impiety, cruelty, and folly; ſuch as proclaiming his horſe conſul, feeding it at his table, introducing it to the temple in the veſtments of the prieſts of Jupiter, &c. and cauſing ſacrifices to be offered to himſelf, his wife, and the horſe. After having murdered many of his ſubjects with his own hand, and cauſed others to be put to death without any juſt cauſe, he was aſſaſſinated by a tribune of the people as he came out of the amphitheatre, A. D. 41, in the 29th year of his age, and 4th of his reign.

Calin || Calippic period.

CALIN, a compound metal, whereof the Chineſe make tea caniſters, and the like. The ingredients ſeem to be lead and tin.

CALIPH, or KHALIF, the ſupreme eccleſiaſtical dignity among the Saracens; or, as it is otherwiſe defined, a ſovereign dignity among the Mahometans, veſted with abſolute authority in all matters relating both to religion and policy. In the Arabic it ſignifies *ſucceſſor* or *vicar;* the caliphs bearing the ſame relation to Mahomet that the popes pretend they do to Jeſus Chriſt or St Peter. It is at this day one of the Grand Signior's titles, as ſucceſſor of Mahomet; and of the Sophi of Perſia, as ſucceſſor of Ali. One of the chief functions of the caliph, in quality of imam or chief prieſt of Muſſulmaniſm, was to begin the public prayers every Friday in the chief moſque, and to deliver the *khothbah* or ſermon. In after times, they had aſſiſtants for this latter office; but the former the caliphs always performed in perſon. The caliph was alſo obliged to lead the pilgrims to Mecca in perſon, and to march at the head of the armies of his empire. He granted inveſtiture to princes; and ſent ſwords, ſtandards, gowns, and the like, as preſents to princes of the Mahometan religion; who, though they had thrown off the yoke of the caliphate, nevertheleſs held of it as vaſſals. The caliphs uſually went to the moſque mounted on mules; and the ſultans Selgiucides, though maſters of Bagdad, held their ſtirrups, and led their mule by the bridle ſome diſtance on foot, till ſuch time as the caliphs gave them the ſign to mount on horſeback. At one of the windows of the caliph's palace, there always hung a piece of black velvet 20 cubits long, which reached to the ground, and was called the *caliph's ſleeve;* which the grandees of his court never failed to kiſs every day, with great reſpect. After the deſtruction of the caliphate by Hulaku, the Mahometan princes appointed a particular officer, in their reſpective dominions, who ſuſtains the ſacred authority of caliph. In Turkey, he goes under the denomination of *mufti*, and in Perſia under that of *ſadne*.

CALIPHATE, the office or dignity of caliph: See the preceding article. The ſucceſſions of caliphs continued from the death of Mahomet till the 655th year of the Hegira, when the city of Bagdad was taken by the Tartars. After this, however, there were perſons who claimed the caliphate, as pretending to be of the family of the Abaſſides, and to whom the ſultans of Egypt rendered great honours at Cairo, as the true ſucceſſors of Mahomet: but this honour was merely titular, and the rights allowed them only in matters relating to religion; and though they bore the ſovereign title of *caliphs*, they were nevertheleſs ſubjects and dependents of the ſultans. In the year of the Hegira 361, a kind of caliphate was erected by the Fatemites in Africa, and laſted till it was ſuppreſſed by Saladin. Hiſtorians alſo ſpeak of a third caliphate in Gemen or Arabia Felix, erected by ſome princes of the family of the Jobites. The emperors of Morocco aſſume the title of *grand cherifs;* and pretend to be the true caliphs, or ſucceſſors of Mahomet, though under another name.

CALIPPIC PERIOD, in *Chronology*, a ſeries of ſeventy-ſix

Caliſta || Calkins.

ſeventy-ſix years, perpetually recurring; which clapſed, the middle of the new and full moons, as its inventor Calippus, an Athenian, imagined, return to the ſame day of the ſolar year. Meton, an hundred years before, had invented the period, or cycle, of nineteen years; aſſuming the quantity of the ſolar year 365*d.* 6*h.* 18′ 56″ 50^3 31^4 34^5; and the lunar month, 29*d.* 12*h.* 45′ 47″ 26^3 48^4 30^5: but Calippus, conſidering that the Metonic quantity of the ſolar year was not exact, multiplied Meton's period by 4, and thence aroſe a period of 76 years, called the *Calippic*. The Calippic period, therefore, contains 27,759 days: and ſince the lunar cycle contains 235 lunations, and the *Calippic period* is quadruple of this, it contains 940 lunations. This period began in the third year of the 112th Olympiad, or the 4384th of the Julian period. It is demonſtrated, however, that the Calippic period itſelf is not accurate; that it does not bring the new and full moons preciſely to their places: 8*h.* 5′ 52″ 60‴, being the exceſs of 940 lunations above 76 ſolar years; but brings them too late, by a whole day in 225 years.

CALISTA, in fabulous hiſtory, the daughter of Lycaon king of Arcadia, and one of the nymphs of Diana. Being beloved by Jupiter, that god aſſumed the form of the goddeſs of chaſtity, by which means he debauched her: but her diſgrace being revealed, as ſhe was bathing with her patroneſs, the incenſed deity turned her and the ſon with which ſhe was pregnant into bears; when Jupiter, in compaſſion to her ſufferings, took them up into the heavens, and made them the conſtellations Urſa Major and Urſa Minor.

CALIX. See Calyx.

CALIXTINS, a name given to thoſe, among the Lutherans, who follow the ſentiments of George Calixtus, a celebrated divine, and profeſſor at Helmſtadt, in the duchy of Brunſwick, who died in 1656: he oppoſed the opinion of St Auguſtin, on predeſtination, grace, and free will, and endeavoured to form an union among the various members of the Romiſh, Lutheran, and reformed churches; or, rather, to join them in the bonds of mutual forbearance and charity.

Calixtins alſo denote a ſect in Bohemia, derived from the Huſſites, about the middle of the 15th century, who aſſerted the uſe of the cup as eſſential to the euchariſt. And hence their name; which is formed from the Latin *calyx*, a cup.

The Calixtins are not ranked by Romaniſts in the liſt of heretics, ſince in the main they ſtill adhered to the doctrine of Rome. The reformation they aimed at terminated in the four following articles. 1. In reſtoring the cup to the laity. 2. In ſubjecting the criminal clerks to the puniſhment of the civil magiſtrate. 3. In ſtripping the clergy of their lands, lordſhips, and all temporal juriſdiction. 4. In granting liberty to all capable prieſts to preach the word of God.

CALKA, a kingdom of Tartary, in Aſia, to the eaſt of Siberia.

CALKING. See Caulking.

CALKINS, the prominent parts at the extremities of a horſe ſhoe, bent downwards, and forged to a ſort of point.

Calkins are apt to make horſes trip: they alſo occaſion bleymes, and ruin the back ſinews. If faſhioned in form of a hare's ear, and the horn of a horſe's heel be pared a little low, they do little damage; whereas, the great ſquare calkins quite ſpoil the foot.

Call || Callao.

Calkins are either ſingle or double, that is, at one end of the ſhoe, or at both: theſe laſt are deemed leſs hurtful, as the horſes can tread more even.

CALL, among hunters, a leſſon blown upon the horn, to comfort the hounds.

Call, an Engliſh name for the mineral called tungſten or wolfram by the Germans.

Call, among ſailors, a ſort of whiſtle or pipe, of ſilver or braſs, uſed by the boatſwain and his mates to ſummon the ſailors to their duty, and direct them in the different employments of the ſhip. As the call can be ſounded to various ſtrains, each of them is appropriated to ſome particular exerciſe; ſuch as hoiſting, heaving, lowering, veering away, belaying, letting go a tackle, &c. The act of winding this inſtrument is called piping, which is as attentively obſerved by ſailors as the beat of the drum to march, retreat, rally, charge, &c. is obeyed by ſoldiers.

Call, among fowlers, the noiſe or cry of a bird eſpecially to its young, or to its mate in coupling time. One method of catching partridges is by the natural call of a hen trained for the purpoſe, which drawing the cocks to her, they are entangled in a net. Different birds require different ſorts of calls; but they are moſt of them compoſed of a pipe or reed, with a little leathern bag or purſe, ſomewhat in form of a bellows; which, by the motion given thereto, yields a noiſe like that of the ſpecies of bird to be taken. The call for partridges is formed like a boat bored through, and fitted with a pipe or ſwan's quill, &c. to be blown with the mouth, to make the noiſe of the cock partridge, which is very different from the call of the hen. Calls for quails &c. are made of a leathern purſe in ſhape like a pear, ſtuffed with horſe hair, and fitted at the end with the bone of a cat's, hare's, or coney's leg, formed like a flageolet. They are played, by ſqueezing the purſe in the palm of the hand, at the ſame time ſtriking on the flageolet part with the thumb to counterfeit the call of the hen quail.

Call of the Houſe. See Calling.

CALLA, Wake-robin, or *Ethiopian Arum*. See Botany *Index*.

Calla Sufung, a town of Aſia, in the iſland of Bouton in the Eaſt Indies. It is ſeated about a mile from the ſea, on the top of a ſmall hill ſurrounded with cocoa nut trees. See Bouton.

CALLAO, a ſtrong town of South America, in Peru. It is the port of Lima, from which it is diſtant about five miles. The town is built on a low flat point of land on the ſea-ſhore. It is fortified; but the fortifications were much damaged by the laſt great earthquake, and have not ſince been repaired. The town is not above nine or ten feet above the level of high water mark; but the tide does not commonly riſe or fall above five feet. The ſtreets are drawn in a line; but are full of duſt, which is very troubleſome. In a ſquare near the ſea ſide are the governor's houſe, the viceroy's palace, the pariſh church, and a battery of three pieces of cannon. On the north ſide are the warehouſes for the merchandiſe brought from Chili, Mexico, and other parts of Peru. The other churches are built with reeds, and covered with timber or clay, but they look tolerably neat. There are five monaſte-

ries

Calle || Calligraphy.

ries and an hoſpital, though the number of families does not exceed 400. The trade of Callao is conſiderable. From Chili they bring cordage, leather, tallow, dried fiſh, and corn; from Chiloe, cedar planks, woollen manufactures, and carpets; from Peru, ſugars, wines, brandy, maſts, cordage, timber for ſhipping, cacao, tobacco, and melaſſes; from Mexico, pitch, tar, woods for dyeing, ſulphur, balſam of Peru both white and brown, as well as commodities from China. At the port of Callao the watering is eaſy, but the wood is a mile or two diſtant. Earthquakes are very frequent in theſe parts, which have done vaſt miſchief to Lima and Callao. W. Long. 76. 15. S. Lat. 12. 29.

CALLE, in *Ancient Geography*, a town of Hither Spain, ſituated on an eminence which hangs over the river Durius; whoſe port was at the mouth of the river. Now *Porto*, *Oporto*, or *Port a Port*.

CALLEN, a town of Ireland, in the county of Kilkenny and province of Leinſter, about ten miles ſouth-weſt of Kilkenny. W. Long. 7. 22. N. Lat. 52. 25.

CALLICARPA. See JOHNSONIA.

CALLICO, in commerce, a ſort of cloth reſembling linens made of cotton. The name is taken from that of Calicut, a city on the coaſt of Malabar, being the firſt place at which the Portugueſe landed when they diſcovered the India trade. The Spaniards ſtill call it *callicu*.

Callicoes are of different kinds, plain, printed, painted, ſtained, dyed, chints, muſlins, and the like, all included under the general denomination of *callicoes*. Some of them are painted with various flowers of different colours: others are not ſtained, but have a ſtripe of gold and ſilver quite through the piece, and at each end is fixed a tiſſue of gold, ſilver, and ſilk, intermixed with flowers. The printing of callicoes was firſt ſet on foot in London about the year 1676.

CALLICRATES, an ancient ſculptor, who engraved ſome of Homer's verſes on a grain of millet, made an ivory chariot that might be concealed under the wing of a fly, and an ant of ivory in which all the members were diſtinct: but Ælian juſtly blames him for exerting his genius and talents in things ſo uſeleſs, and at the ſame time ſo difficult. He flouriſhed about the year 472 before Chriſt.

CALLIGONUM. See BOTANY *Index*.

CALLIGRAPHUS anciently denoted a copyiſt, or ſcrivener, who tranſcribed fair, and at length, what the notaries had taken down in notes or minutes. The word is compounded of καλλος, *beauty*, and γραφω, *I write*. The minutes of acts, &c. were always taken in a kind of cypher, or ſhort hand; ſuch as the notes of Tyro in Gruter: by which means the notaries, as the Latins called them, or the σημειογραφοι and ταχυγραφοι, as the Greeks called them, were enabled to keep pace with a ſpeaker or perſon who dictated. Theſe notes, being underſtood by few, were copied over fair, and at length, by perſons who had a good hand, for ſale, &c. Theſe perſons were called *calligraphi;* a name frequently met with in the ancient writers.

CALLIGRAPHY, the art of fair writing. Callicrates is ſaid to have written an elegant diſtich on a ſeſamum ſeed. Junius ſpeaks of a perſon, as very extraordinary, who wrote the apoſtles creed, and beginning of St John's Goſpel, in the compaſs of a farthing. What would he have ſaid of our famous Peter Bale, who in 1575 wrote the Lord's prayer, creed, ten commandments, and two ſhort prayers in Latin, with his own name, motto, day of the month, year of the Lord, and reign of the queen, in the compaſs of a ſingle penny, enchaſed in a ring and border of gold, and covered with a cryſtal, all ſo accurately wrought as to be very legible?

Callima-chus || Callipædia.

CALLIMACHUS, a celebrated architect, painter, and ſculptor, born at Corinth, having ſeen by accident a veſſel about which the plant called *acanthus* had raiſed its leaves, conceived the idea of forming the Corinthian capital; hence the Corinthian order of architecture. The ancients aſſure us, that he worked in marble with wonderful delicacy. He flouriſhed about 540 B. C.

CALLIMACHUS, a celebrated Greek poet, native of Cyrene in Libya, flouriſhed under Ptolemy Philadelphus and Ptolemy Eurgetes kings of Egypt, about 280 years before Chriſt. He paſſed, according to Quintilian, for the prince of the Greek elegiac poets. His ſtyle is elegant, delicate, and nervous. He wrote a great number of ſmall poems, of which we have only ſome hymns and epigrams remaining. Catullus has cloſely imitated him, and tranſlated into Latin verſe his ſmall poem on the locks of Berenice. Callimachus was alſo a good grammarian and a learned critic. There is an edition of his remains, by Meſſ. le Fevre, quarto; and another in two volumes 8vo, with notes by Spanheim, Grævius, Bentley, &c.

CALLING the HOUSE, in the Britiſh parliament, is the calling over the members names, every one anſwering to his own, and going out of the houſe, in the order in which he is called: this they do in order to diſcover whether there be any perſon there not returned by the clerk of the crown, or if any member be abſent without the leave of the houſe.

CALLINICUS of Heliopolis, inventor of a compoſition to burn in the water, called the *Greek*, and ſince *Wild-fire*. See *Grecian* FIRE.

CALDINUS of Epheſus, a very ancient Greek poet, inventor of elegiac verſe; ſome ſpecimens of which are to be found in the collection of Stobeus. He flouriſhed about 776 years before Chriſt.

CALLIONYMUS, the DRAGONET. See ICHTHYOLOGY *Index*.

CALLIOPE, in the Pagan mythology, the Muſe who preſides over eloquence and heroic poetry. She was thus called from the ſweetneſs of her voice, and was reckoned the firſt of the nine ſiſters. Her diſtinguiſhing office was to record the worthy actions of the living; and accordingly ſhe is repreſented with tablets in her hand.

CALLIPÆDIA, the art of getting or breeding fine and beautiful children. We find divers rules and practices, relating to this art, in ancient and modern writers. Among the Magi, a ſort of medicine called *ermeſia* was adminiſtered to pregnant women, as a means of producing a beautiful iſſue. Of this kind were the kernels of pine nuts ground with honey, myrrh, ſaffron, plam wine and milk. The Jews are ſaid to have been ſo ſolicitous about the beauty of their children, that care was taken to have ſome very beautiful child placed at the door of the public baths, that the women at

Callipoli || Calloo.

at going out being ſtruck with his appearance, and retaining the idea, might all have children as fine as he. The Chineſe take ſtill greater care of their breeding women, to prevent uncouth objects of any kind from ſtriking their imagination. Muſicians are employed at night to entertain them with agreeable ſongs and odes, in which are ſet forth all the duties and comforts of a conjugal and domeſtic life; that the infant may receive good impreſſions even before it is born, and not only come forth agreeably formed in body, but well diſpoſed in mind. Callipædia, nevertheleſs, ſeems to have been firſt erected into a juſt art by Claude Quillet de Chinon, a French abbot, who, under the fictitious name of *Calvides Lætus*, has publiſhed a fine Latin poem in four books, under the title of *Callipædia, ſeu de pulchræ prolis habendæ ratione;* wherein are contained all the precepts of that new art. There is a tranſlation of it into Engliſh verſe by Mr Rowe.

CALLIPOLIS, in *Ancient Geography*, the name of ſeveral cities of antiquity, particularly one upon the Helleſpont, next the Propontis, and oppoſite to Lampſacus in Aſia. Now GALLIPOLI.

CALLIPPIC PERIOD. See CALIPPIC.

CALLIRRHOE, in *Ancient Geography*, ſurnamed *Enneacrunos*, from its nine ſprings or channels; a fountain not far from Athens, greatly adorned by Piſiſtratus, where there were ſeveral wells, but this the only running ſpring. Callirrhoe was alſo the name of a very fine ſpring of hot water beyond Jordan near the Dead Sea, into which it empties itſelf.

CALLISIA. See BOTANY *Index*.

CALLISTEA, in Grecian antiquity, a Leſbian feſtival, wherein the women preſented themſelves in Juno's temple, and the prize was aſſigned to the faireſt. There was another of theſe contentions at the feſtival of Ceres Eleuſinia among the Parrhaſians, and another among the Eleans, where the moſt beautiful man was preſented with a complete ſuit of armour, which he conſecrated to Minerva, to whoſe temple he walked in proceſſion, being accompanied by his friends who adorned him with ribbons, and crowned him with a garland of myrtle.

CALLISTHENES the philoſopher, diſciple and relation of Ariſtotle, by whoſe deſire he accompanied Alexander the Great in his expeditions; but proving too ſevere a cenſurer of that hero's conduct, he was by him put to the torture (on a ſuſpicion of a treaſonable conſpiracy), and died under it, 328 years before Chriſt.

CALLISTRATUS, an excellent Athenian orator, was baniſhed for having obtained too great an authority in the government. Demoſthenes was ſo ſtruck with the force of his eloquence, and the glory it procured him, that he abandoned Plato, and reſolved from thenceforward to apply himſelf to oratory.

CALLITRICHE, or STAR-GRASS, in *Botany*: A genus of the digynia order, belonging to the monandria claſs of plants; and in the natural method ranking under the 12th order, *Holoraceæ*. There is no calyx, but two petals, and the capſule is bilocular and tetraſpermous.

CALLOO, a fortreſs in the Netherlands, in the territory of Waes, on the river Scheld, ſubject to the houſe of Auſtria. The Dutch were defeated here by the Spaniards in 1638. E. Long. 4. 10. N. Lat. 51. 15.

CALLOSUM CORPUS, in *Anatomy*, a whitiſh hard ſubſtance, joining the two hemiſpheres of the brain, and appearing in view when the two hemiſpheres are drawn back. See ANATOMY *Index*.

Calloſum corpus || Callot.

CALLOT, JAMES, a celebrated engraver, born at Nancy in 1593. In his youth he travelled to Rome to learn deſigning and engraving; and from thence went to Florence, where the grand duke took him into his ſervice. After the death of that prince, Callot returned to his native country; when he was very favourably received by Henry duke of Lorrain, who ſettled a conſiderable penſion upon him. His reputation being ſoon after ſpread all over Europe, the infanta of the Netherlands drew him to Bruſſels, where he engraved the ſiege of Breda. Louis XIII. made him deſign the ſiege of Rochelle, and that of the iſle of Rhé. The French king, having taken Nancy in 1631, made Callot the propoſal of repreſenting that new conqueſt, as he had already done the taking of Rochelle: but Callot begged to be excuſed; and ſome courtiers reſolving to oblige him to do it, he anſwered, that he would ſooner cut off his thumb than do any thing againſt the honour of his prince and country. This excuſe the king accepted; and ſaid, that the duke of Lorrain was happy in having ſuch faithful and affectionate ſubjects. Callot followed his buſineſs ſo cloſely, that, though he died at 43 years of age, he is ſaid to have left of his own execution about 1500 pieces. The following are a few of the principal. 1. The *murder of the innocents*, a ſmall oval plate, engraved at Florence. Callot engraved the ſame ſubject at Nancy, with ſome difference in the figures on the back ground. The former is the moſt rare; a fine impreſſion of it is very difficult to be found. 2. The *marriage of Cana in Galilee*, from Paolo Veroneſe, a middling ſized plate, lengthwiſe. 3. The *paſſion of Chriſt*, on 12 very ſmall upright plates: firſt impreſſions very ſcarce. 4. *St John in the iſland of Patmos*, a ſmall plate, nearly ſquare. 5. The *temptation of St Anthony*, a middling ſized plate, lengthwiſe. He alſo engraved the ſame ſubject larger; which, though not the beſt, is notwithſtanding the ſcarceſt print. There is a conſiderable difference in the treatment of the ſubject in the two prints. 6. The *puniſhments*, wherein is ſeen the execution of ſeveral criminals. The marks of the beſt impreſſions of this plate are, a ſmall ſquare tower which appears above the houſes, towards the left, and a very ſmall image of the Virgin placed in an angle of the wall, near the middle of the print. 7. The *miſeries of war*, 18 ſmall plates, lengthwiſe. There is another ſet on the ſame ſubject, conſiſting of ſeven plates leſs than the former. 8. The *great fair of Florence*, ſo called becauſe it was engraved at Florence. As ſeveral parts of this plate were not equally bitten by the aquafortis, it is difficult to meet with a fine impreſſion. Callot, on his return to Nancy, re-engraved this plate without any alteration. The copy, however, is by no means equal to the original. The firſt is diſtinguiſhed from the ſecond by the words *in Firenza*, which appear below at the right-hand corner of the plate. The ſecond has theſe words in the ſame place, *Fe. Florientis, excudit Nancei.* There is alſo a large copy of this print, reverſed, publiſhed by Savery; but the difference is eaſily diſtinguiſhed between it and the true print. 9. The *little fair*, otherwiſe called the *players at bowls*; where alſo ſome peaſants are repreſented

Callus ‖ Calm.

preſented dancing. This is one of the ſcarceſt of Callot's prints; and it is very difficult to meet with a fine impreſſion of it, for the diſtances and other parts of the plate failed in the biting it with the aquafortis. 10. The *tilting, or the new ſtreet at Nancy*, a middling ſized plate, lengthwiſe. 11. The *Garden of Nancy*, where young men are playing with a balloon, the ſame. 12. *View of the Pont Neuf*, a ſmall plate, lengthwiſe. 13. *View of the Louvre*, the ſame. 14. *Four landſcapes*, ſmall plates, lengthwiſe.

CALLUS, or CALLOSITY, in a general ſenſe, any cutaneous, corneous, or oſſeous hardneſs, whether natural or preternatural; but moſt frequently it means the callus generated about the edges of a fracture, provided by nature to preſerve the fractured bones, or divided parts, in the ſituation in which they are replaced by the ſurgeon. A callus, in this laſt ſenſe, is a ſort of jelly, or liquid viſcous matter, that ſweats out from the ſmall arteries and bony fibres of the divided parts, and fills up the chinks or cavities between them. It firſt appears of a cartilaginous ſubſtance; but at length becomes quite bony, and joins the fractured part ſo firmly together, that the limb will often make greater reſiſtance to any external violence, with this part than with thoſe which were never broken.

CALLUS is alſo a hard, denſe, inſenſible knob, riſing on the hands, feet, &c. by much friction and preſſure againſt hard bodies.

CALM, the ſtate of reſt which appears in the air and ſea when there is no wind ſtirring. A calm is more dreaded by a ſeafaring man than a ſtorm, if he has a ſtrong ſhip and ſea room enough; for, under the line exceſſive heat ſometimes produces ſuch dead calms, that ſhips are obliged to ſtay two or three months without being able to ſtir one way or other. Two oppoſite winds will ſometimes make a calm. This is frequently obſerved in the gulf of Mexico, at no great diſtance from the ſhore, where ſome guſt or land wind will ſo poiſe the general eaſterly wind, as to produce a perfect calm.

Calms are never ſo great on the ocean as on the Mediterranean, becauſe the flux and reflux of the former keep the water in a continual agitation, even where there is no wind; whereas there being no tides in the latter, the calm is ſometimes ſo dead, that the face of the water is as clear as a looking glaſs; but ſuch calms are almoſt conſtant preſages of an approaching ſtorm. On the coaſts about Smyrna, a long calm is reputed a prognoſtic of an earthquake.

It is not uncommon for the veſſels to be calmed, or becalmed, as the ſailors expreſs it, in the road of the conſtant Levantine winds, in places where they ride near the land. Thus between the two capes of Cartooche towards the main, and Cape Antonio in Cuba, the ſea is narrow, and there is often a calm produced by ſome guſt of a land wind, that poiſes the Levantine wind, and renders the whole perfectly ſtill for two or three days. In this caſe, the current that runs here is of uſe to the veſſels, if it ſets right; when it ſets eaſterly, a ſhip will have a paſſage in three or four days to the Havannah; but if otherwiſe, it is often a fortnight or three weeks ſail, the ſhip being embayed in the gulf of Mexico.

When the weather is perfectly calm, no wind at all ſtirring, the ſailors try which way the current ſets, by means of a boat which they ſend out, and which will ride at anchor, though there is no bottom to be found, as regularly and well as if faſtened by the ſtrongeſt anchor to the bottom. The method is this: they row the boat to a little diſtance from the ſhip, and then throw over their plummet, which is about forty pounds weight; they let this ſink to about two hundred fathoms; and then, though it never reaches the bottom, the boat will turn head againſt the current, and ride as firmly as can be.

Calm ‖ Calogeri.

CALM Latitudes, in ſea language, are ſituated in the Atlantic ocean, between the tropic of Cancer and the latitude of 29° N. or they denote the ſpace that lies between the trade and variable winds, becauſe it is frequently ſubject to calms of long duration.

CALMAR, a ſtrong ſea port of Sweden, in the province of Smaland, divided into two towns, the old and the new; but of the former there remains only the church and a few houſes. The new town is built a little way from the other, and has large handſome houſes. E. Long. 16. 15. N. Lat. 56. 48.

CALMET, AUGUSTINE, one of the moſt learned and laborious writers of the 18th century, was born at Meſnil le Horgne, a village in the dioceſe of Toul in France, in the year 1672, and took the habit of the Benedictines in 1688. Among the many works he publiſhed are, 1. A literal expoſition in French, of all the books in the Old Teſtament, in nine volumes folio. 2. An hiſtorical, critical, chronological, geographical, and literal dictionary of the Bible, in four vols, folio, enriched with a great number of figures of Jewiſh antiquities. 3. A civil and eccleſiaſtical hiſtory of Lorrain, three vols. folio. 4. A hiſtory of the Old and New Teſtament, and of the Jews, in two volumes folio, and ſeven vols. duodecimo. 5. An univerſal ſacred and profane hiſtory, in ſeveral volumes quarto. He died in 1757.

CALMUCKS. See KALMUCKS.

CALNE, a town of Wiltſhire in England, ſeated on a river of the ſame name. It has a handſome church, and ſends two members to parliament. W. Long. 1. 59. N. Lat. 51. 30.

CALNEH, in *Ancient Geography*, a city in the land of Shinar, built by Nimrod, and the laſt city mentioned (Gen. x. 10.) as belonging to his kingdom. It is believed to be the ſame with Calno, mentioned in Iſaiah (x. 9.) and with Canneh in Ezekiel (xxvii. 23.) with ſtill greater variation. It is obſerved, that it muſt have been ſituated in Meſopotamia, ſince theſe prophets join it with Haran, Eden Aſſyrian, and Chilmad, which carried on a trade with Tyre. It is ſaid by the Chaldee interpreters, as alſo by Euſebius and Jerome, to be the ſame with Cteſiphon, ſtanding upon the Tigris, about three miles diſtant from Seleucia, and that for ſome time it was the capital city of the Parthians.

CALOGERI, in church hiſtory, monks of the Greek church, divided into three degrees: the novices, called *archari;* the ordinary profeſſed, called *microchemi;* and the more perfect, called *megalochemi:* they are likewiſe divided into cœnobites, anchorets, and recluſes. The cœnobites are employed in reciting their offices from midnight to ſunſet, they are obliged to make three genuflexions at the door of the choir, and, returning, to bow to the right and to the left, to their brethren.

Calomel || Calvart.

thren. The anchorets retire from the converſation of the world, and live in hermitages in the neighbourhood of the monaſteries; they cultivate a little ſpot of ground, and never go out but on Sundays and holidays to perform their devotions at the next monaſtery. As for the recluſes, they ſhut themſelves up in grottos and caverns on the tops of mountains, which they never go out off, abandoning themſelves entirely to Providence: they live on the alms ſent them by the neighbouring monaſteries.

CALOMEL, or dulcified ſublimate of mercury, is a combination of mercury with the muriatic acid, in the preſent nomenclature called a *ſub-muriate of mercury*. See PHARMACY and CHEMISTRY *Index*.

CALOPHYLLUM. See BOTANY *Index*.

CALOTTE, a cap or coif of hair, ſatin, or other ſtuff; an eccleſiaſtical ornament in moſt Popiſh countries. See CAP.

CALOTTE, in *Architecture*, a round cavity or depreſſure, in form of a cap or cup, lathed and plaſtered, uſed to diminiſh the riſe or elevation of a moderate chapel, cabinet, alcove, &c. which without ſuch an expedient would be too high for other pieces of the apartment.

CALPE, a mountain of Andaluſia in Spain; at the foot of which, towards the ſea, ſtands the town of Gibraltar. It is half a league in height towards the land, and ſo ſteep that there is no approaching it on that ſide.

CALPURNIUS, TITUS, a Latin Sicilian poet, lived under the emperor Carus and his ſon. We have ſeven of his eclogues remaining.

CALQUING, or CALKING, a term uſed in painting, &c. where the back ſide of any thing is covered over with a black or red colour, and the ſtrokes or lines traced through on a waxed plate, wall, or other matter, by paſſing lightly over each ſtroke of the deſign with a point, which leaves an impreſſion of the colour on the plate or wall.

CALTHA. See BOTANY *Index*. There is only one ſpecies known, which grows naturally in moiſt boggy lands in many parts of England and Scotland. The flowers gathered before they expand, and preſerved in ſalted vinegar, are a good ſubſtitute for capers. The juice of the petals, boiled with a little alum, ſtains paper yellow. The remarkable yellowneſs of the butter in ſpring is ſuppoſed to be cauſed by this plant: but cows will not eat it, unleſs compelled by extreme hunger; and then, Boerhaave ſays, it occaſions ſuch an inflammation, that they generally die. Upon May-day, the country people ſtrew the flowers upon the pavement before their doors. Goats and ſheep eat this plant; horſes, cows, and ſwine, refuſe it.

CALTROP. See TRIBULUS, BOTANY *Index*.

CALTROP, in military affairs, an inſtrument with four iron points, diſpoſed in a triangular form, ſo that three of them are always on the ground, and the fourth in the air. They are ſcattered over the ground where the enemy's cavalry is to paſs, in order to embarraſs them.

CALVARIA, in *Anatomy*, the hairy ſcalp or upper part of the head, which, either by diſeaſe or old age, grows bald firſt.

CALVART, DENIS, a celebrated painter, was born at Antwerp in 1552; and had for his maſters Proſpero Fontana and Lorenzo Sabbatini. He opened a ſchool at Bologna, which became celebrated; and from which proceeded Guido, Albani, and other great maſters. Calvart was well ſkilled in architecture, perſpective, and anatomy, which he conſidered as neceſſary to a painter, and taught them to his pupils. His principal works are at Bologna, Rome, and Reggio. He died at Bologna in 1619.

Calvary || Calvin.

CALVARY, a term uſed in Catholic countries for a kind of chapel of devotion raiſed on a hillock near a city, in memory of the place where Jeſus Chriſt was crucified near the city of Jeruſalem. The word comes from the Latin *calvarium*; and that from *calvus*, bald, in regard the top of that hillock was bare and deſtitute of verdure; which is alſo ſignified by the Hebrew word *golgotha*. Such is the Calvary of St Valerian near Paris; which is accompanied with ſeveral little chapels, in each of which is repreſented in ſculpture one of the myſteries of the Paſſion.

CALVARY, in *Heraldry*, a croſs ſo called, becauſe it reſembles the croſs on which our Saviour ſuffered. It is always ſet upon ſteps.

CALVERT, GEORGE, afterwards Lord Baltimore, was born at Kipling in Yorkſhire about the year 1582, and educated at Oxford, where he took the degree of bachelor of arts, and afterwards travelled. At his return, he was made ſecretary to Sir Robert Cecil: he was afterwards knighted, and in 1618 appointed one of the principal ſecretaries of ſtate. But after he had enjoyed that poſt about five years, he willingly reſigned it; freely owning to his majeſty that he was become a Roman Catholic, ſo that he muſt either be wanting to his truſt, or violate his conſcience in diſcharging his office. This ingenuous confeſſion ſo affected King James, that he continued him privy counſellor all his reign, and the ſame year created him baron of Baltimore in the kingdom of Ireland. He had before obtained a patent for him and his heirs, for the province of Avelon in Newfoundland: but that being expoſed to the inſults of the French, he abandoned it, and afterwards obtained the grant of a country on the north part of Virginia from Charles I. who called it *Maryland*, in honour of his queen: but he died in April 1632 (aged 50), before the patent was made out. It was, however, filled up to his ſon Cecil Calvert Lord Baltimore; and bears date June 20. 1632. It is held from the crown as part of the manor of Windſor, on one very ſingular condition, viz. to preſent two Indian arrows yearly, on Eaſter Tueſday, at the caſtle, where they are kept and ſhown to viſitors.—His lordſhip wrote, 1. A Latin poem on the death of Sir Henry Upton. 2. Speeches in parliament. 3. Various letters of ſtate. 4. The anſwer of Tom Tell-truth. 5. The Practice of Princes. And, 6. The Lamentation of the Kirk.

CALVI, a town of the province of Lavoro, in the kingdom of Naples, ſituated near the ſea, about fifteen miles north of the city of Naples. E. Long. 14. 45. N. Lat. 41. 15.

CALVI is alſo the name of a ſea port in the iſland of Corſica, ſituated on a bay, on the weſt ſide of the iſland, about 40 miles ſouth-weſt of Baſtia. E. Long. 9. 5. N. Lat. 42. 16.

CALVIN, JOHN, the celebrated reformer of the Chriſtian church from Romiſh ſuperſtitions and doctrinal

Calvin. nal errors, and founder of the ſect ſince called *Calviniſts*, was born in 1509. He was the ſon of a cooper of Noyon in Picardy; and his real name was *Chauvin*, which he choſe to latinize into *Calvinus*, ſtyling himſelf in the title page to his firſt work (a Commentary on *Seneca de clementia*), "Lucius Calvinus, Civis Romanus;" an early proof of his pride, at about 24 years of age. In 1529, he was rector of Pont l'Eveque; and in 1534 he threw up this benefice, ſeparating himſelf entirely from the Romiſh church. The perſecution againſt the Proteſtants in France (with whom he was now aſſociated) obliged him to retire to Baſle in Switzerland: here he publiſhed his famous Inſtitutes of the Chriſtian religion in 1535. The following year he was choſen profeſſor of divinity, and one of the miniſters of the church at Geneva. The next year, viz. 1537, he made all the people ſolemnly ſwear to a body of doctrines; but finding that religion had not yet had any great influence on the morals of the people, he, aſſiſted by other miniſters, declared, that ſince all their admonitions and warnings had proved unſucceſsful, they could not celebrate the holy ſacrament as long as theſe diſorders reigned; he alſo declared, that he could not ſubmit to ſome regulations made by the ſynod of Berne. Upon which the ſyndics having ſummoned the people, it was ordered that Calvin and two other miniſters ſhould leave the city within two days. Upon this Calvin retired to Straſburg, where he eſtabliſhed a French church, of which he was the firſt miniſter, and was alſo choſen profeſſor of divinity there. Two years after he was choſen to aſſiſt at the diet appointed by the emperor to meet at Worms and at Ratiſbon in order to appeaſe the troubles occaſioned by the difference of religion. He went with Bucer, and entered into a conference with Melancthon. The people of Geneva now entreated him to return; to which he conſented, and arrived at Geneva, September 13. 1541. He began with eſtabliſhing a form of eccleſiaſtical diſcipline, and a conſiſtorial juriſdiction, with the power of inflicting all kinds of canonical puniſhments. This was greatly diſliked by many perſons, who imagined that the papal tyranny would ſoon be revived. Calvin, however, aſſerted on all occaſions the rights of his conſiſtory with inflexible ſtrictneſs; and he cauſed Michael Servetus to be burnt at the ſtake for writing againſt the doctrine of the Trinity. But though the rigour of his proceedings ſometimes occaſioned great tumults in the city, yet nothing could ſhake his ſteadineſs and inflexibility. Amongſt all the diſturbances of the commonwealth, he took care of the foreign churches in England, France, Germany, and in Poland; and did more by his pen than his preſence, ſending his advice and inſtructions by letter, and writing a greater number of books. This great reformer died on the 27th of May 1564, aged 55. His works were printed together at Amſterdam in 1671, in nine volumes folio; the principal of which are his Inſtitutions, in Latin, the beſt edition of which is that of Robert Stephens in 1553, in folio; and his Commentaries on the Holy Scriptures.—Calvin is univerſally allowed to have had great talents. an excellent genius, and profound learning. His ſtyle is grave and polite. Independent of his ſpiritual pride, his morals were exemplary; for he was pious, ſober, chaſte, laborious, and diſintereſted. But his memory can never be purified from the ſtain of burning Servetus: it ill became a reformer to adopt the moſt odious practice of the corrupt church of Rome. Calviniſm, Calviniſts.

CALVINISM, the doctrine and ſentiments of Calvin and his followers. Calviniſm ſubſiſts in its greateſt purity in the city of Geneva: and from thence it was firſt propagated into Germany, France, the United Provinces, and England. In France it was aboliſhed by the revocation of the edict of Nantz in 1685. It has been the prevailing religion in the United Provinces ever ſince the year 1571. The theological ſyſtem of Calvin was adopted, and made the public rule of faith in England, under the reign of Edward VI. and the church of Scotland was modelled by John Knox, the diſciple of Calvin, agreeably to the doctrine, rites, and form of eccleſiaſtical government, eſtabliſhed at Geneva. In England, it has declined ſince the time of Queen Elizabeth; though it ſtill ſubſiſts, ſome ſay a little allayed, in the articles of the eſtabliſhed church; and in its rigour in Scotland.

The diſtinguiſhing theological tenets of Calviniſm, as the term is now generally applied, reſpect the doctrines of PREDESTINATION, or particular ELECTION and REPROBATION, original SIN, particular REDEMPTION, effectual, or, as ſome have called it, irreſiſtible GRACE in regeneration, JUSTIFICATION by faith, PERSEVERANCE, and the TRINITY. See each of theſe articles.

Beſides the doctrinal part of Calvin's ſyſtem, which, ſo far as it differs from that of other reformers of the ſame period, principally regarded the abſolute decree of God, whereby the future and eternal condition of the human race was determined out of mere ſovereign pleaſure and free will; it extended likewiſe to the diſcipline and government of the Chriſtian church, the nature of the Euchariſt, and the qualification of thoſe who were entitled to the participation of it. Calvin conſidered every church as a ſeparate and independent body, inveſted with the power of legiſlation for itſelf. He propoſed that it ſhould be governed by preſbyteries and ſynods, compoſed of clergy and laity, without biſhops, or any clerical ſubordination; and maintained, that the province of the civil magiſtrate extended only to its protection and outward accommodation. In order to facilitate an union with the Lutheran church, he acknowledged a real, though ſpiritual, preſence of Chriſt, in the Euchariſt, that true Chriſtians were united to the man Chriſt in this ordinance, and that divine grace was conferred upon them, and ſealed to them, in the celebration of it; and he confined the privilege of communion to pious and regenerate believers. In France the Calviniſts are diſtinguiſhed by the name of *Huguenots*; and, among the common people, by that of *Parpaillots*. In Germany they are confounded with the Lutherans, under the general title *Proteſtants*; only ſometimes diſtinguiſhed by the name *Reformed*.

CALVINISTS, in church hiſtory, thoſe who follow the opinions of CALVIN. See the two preceding articles.

Crypto-CALVINISTS, a name given to the favourers of Calviniſm in Saxony, on account of their ſecret attachment to the Genevan doctrine and diſcipline. Many of them ſuffered by the decrees of the convocation of Torgaw, held in 1576. The Calviniſts in their

Calviſius ‖ Calumet.

progreſs have divided into various branches, or leſſer ſects.

CALVISIUS, Seth, a celebrated German chronologer in the beginning of the 17th century. He wrote *Elenchus calendarii Gregoriani, et duplex calendarii melioris forma*, and other learned works, together with ſome excellent treatiſes on muſic. He died in 1617, aged 61.

CALVITES, or Calvitium, in *Medicine*, baldneſs, or a want of hair, particularly on the ſinciput, occaſioned by the moiſture of the head, which ſhould feed it, being dried up, by ſome diſeaſe, old age, or the immoderate uſe of powder, &c. See Alopecia.

CALUMET, a ſymbolical inſtrument of great importance among the American Indians.—It is nothing more than a pipe, whoſe bowl is generally made of a ſoft red marble: the tube of a very long reed, ornamented with the wings and feathers of birds. No affair of conſequence is tranſacted without the calumet. It ever appears in meetings of commerce or exchanges: in congreſſes for determining of peace or war; and even in the very fury of a battle. The acceptance of the calumet is a mark of concurrence with the terms propoſed; as the refuſal is a certain mark of rejection. Even in the rage of a conflict this pipe is ſometimes offered; and if accepted, the weapons of deſtruction inſtantly drop from their hands, and a truce enſues. It ſeems the ſacrament of the ſavages; for no compact is ever violated which is confirmed by a whiff from this holy reed. When they treat of war, the pipe and all its ornaments are uſually red, or ſometimes red only on one ſide. The ſize and decorations of the calumet are for the moſt part proportioned to the quality of the perſons to whom they are preſented, and to the importance of the occaſion. The calumet of peace is different from that of war. They make uſe of the former to ſeal their alliances and treaties, to travel with ſafety, and to receive ſtrangers; but of the latter to proclaim war. It conſiſts of a red ſtone, like marble, formed into a cavity reſembling the head of a tobacco pipe, and fixed to a hollow reed. They adorn it with feathers of various colours; and name it the calumet of the ſun, to which luminary they preſent it, in expectation of thereby obtaining a change of weather as often as they deſire. From the winged ornaments of the calumet, and its conciliating uſes, writers compare it to the caduceus of Mercury, which was carried by the caduceatores, or meſſengers of peace, with terms to the hoſtile ſtates. It is ſingular, that the moſt remote nations, and the moſt oppoſite in their other cuſtoms and manners, ſhould in ſome things have, as it were, a certain conſent of thought. The Greeks and the Americans had the ſame idea, in the invention of the caduceus of the one, and the calumet of the other.

Dance of the Calumet, is a ſolemn rite among the Indians on various occaſions. They dare not waſh themſelves in rivers in the beginning of ſummer, nor taſte of the new fruits, without performing it; and the ſame ceremony always confirms a peace or precedes a war. It is performed in the winter time in their cabins, and in ſummer in the open fields. For this purpoſe they chooſe a ſpot among trees to ſhade them from the heat of the ſun, and lay in the middle a large mat, as a carpet, ſetting upon it the monitor, or god, of the chief of the company. On the right hand of this image they place the calumet, as their great deity, erecting around it a kind of trophy with their arms. Things being thus diſpoſed, and the hour of dancing come, thoſe who are to ſing take the moſt honourable ſeats under the ſhade of the trees. The company is then ranged round, every one, before he ſits down, ſaluting the monitor, which is done by blowing upon it the ſmoke of their tobacco. Each perſon next receives the calumet in rotation, and holding it with both hands, dances to the cadence of the vocal muſic, which is accompanied with the beating of a ſort of drum. During this exerciſe, he gives a ſignal to one of their warriors, who takes a bow, arrow, and axe, from the trophies already mentioned, and fights him; the former defending himſelf with the calumet only, and both of them dancing all the while. This mock engagement being over, he who holds the calumet makes a ſpeech, in which he gives an account of the battles he has fought, and the priſoners he has taken, and then receives a cloak, or ſome other preſent, from the chief of the ball. He then reſigns the calumet to another, who, having acted a ſimilar part, delivers it to a third, who afterwards gives it to his neighbour, till at laſt the inſtrument returns to the perſon that began the ceremony, who preſents it to the nation invited to the feaſt, as a mark of their friendſhip, and a confirmation of their alliance, when this is the occaſion of the entainment.

Calumny ‖ Calx.

CALUMNY, the crime of accuſing another falſely, and knowingly ſo, of ſome heinous offence.

Oath of Calumny, *Juramentum* (or rather *Jusjurandum*) *Calumniæ*, among civilians and canoniſts, was an oath which both parties in a cauſe were obliged to take; the plantiff that he did not bring his charge, and the defendant that he did not deny it, with a deſign to abuſe each other, but becauſe they believed their cauſe was juſt and good; that they would not deny the truth, nor create unneceſſary delays, nor offer the judge or evidence any gifts or bribes. If the plaintiff refuſed this oath, the complaint or libel was diſmiſſed; if the defendant, it was taken *pro confeſſo*. This cuſtom was taken from the ancient athletæ; who, before they engaged, were to ſwear that they had no malice, nor would uſe any unfair means for overcoming each other. The *juramentum calumniæ* is much diſuſed, as a great occaſion of perjury. Anciently the advocates and proctors alſo took this oath; but of late it is diſpenſed with, and thought ſufficient that they take it once for all at their firſt admiſſion to practice. See alſo Law, Part III. N° clxxxiv. 7.

CALVUS, Cornelius Licinius, a celebrated Roman orator, was the friend of Catullus; and flouriſhed 64 B. C. Catullus, Ovid, and Horace, ſpeak of him.

CALX properly ſignifies *lime*, but has been uſed by chemiſts and phyſicians for a fine powder remaining after the calcination of metals. All metallic calces are found to weigh more than the metal from which they were originally produced. This ariſes from the metal having combined with oxygen during the proceſs of calcination or burning; and hence in the preſent chemical nomenclature they are called *oxides*.

Calx Nativa, in *Natural Hiſtory*, a kind of marly earth, of a dead whitiſh colour, which, if thrown into water,

Calx ‖ Camæa.

water, makes a conſiderable bubbling and hiſſing noiſe, and has, without previous burning, the quality of making a cement like lime or plaſter of Paris.

Calx Viva or *Quick-lime*, that whereon no water has been caſt, in contradiſtinction to lime which has been ſlaked by pouring water on it.

CALYBITES, the inhabitants of a cottage, an appellation given to divers ſaints on account of their long reſidence in ſome hut, by way of mortification.

The word is formed from καλυπτω, *tego*, *I cover*; whence καλυβη, *a little cot*.—The Romiſh church commemorates St John the Calybite on the 15th of December.

CALYCANTHEMÆ, in *Botany*, an order of plants in the *Fragmenta methodi naturalis* of Linnæus, in which are the following genera, viz. epilobium, œnothera, juſſiæa, ludivigia, oldenlandia, iſnarda, &c. See Botany, *Natural Orders*.

CALYCANTHUS. See Botany *Index*.

CALYCIFLORÆ, in *Botany*, the 16th order in Linnæus's *Fragmenta methodi naturalis*, conſiſting of plants which, as the title imports, have the ſtamina (the flower) inſerted into the calyx. This order contains the following genera, viz. eleagnus, hippophae, oſyris, and trophis. See Botany.

CALYCISTÆ, (from *calyx* the flower-cup), ſyſtematic botaniſts, ſo termed by Linnæus, who have arranged all vegetables from the different ſpecies, ſtructure, and other circumſtances, of the calyx or flower-cup. The only ſyſtems of this kind are the *Character Plantarum Novus*, a poſthumous work of Magnolius, profeſſor of botany at Montpelier, publiſhed in 1720; and Linnæus's *Methodus Calycina*, publiſhed in his *Claſſes Plantarum*, at Leyden, in 1738. See Botany *Hiſtory*.

CALYDON, in *Ancient Geography*, a town of Ætolia, ſituated ſeven miles and a half from the ſea, and divided by the river Evenus; the country was anciently called *Æolis*, from the Æolians its inhabitants. This country was famous for the ſtory of Meleager and the Calydonian boar.

CALYPSO, in fabulous hiſtory, a goddeſs, who was the daughter of Oceanus and Tethys, or, as others ſay, of Atlas. She was queen of the iſland of Ogygia, which from her was called the iſland of *Calypſo*. According to Homer, Ulyſſes ſuffered ſhipwreck on her coaſt, and ſtaid with her ſeveral years.

CALYPTRA, among botaniſts, a thin membranaceous involucrum, uſually of a conic figure, which covers the parts of fructification. The capſules of moſt of the moſſes have calyptræ.

CALYX, among botaniſts, a general term expreſſing the cup of a flower, or that part of a plant which ſurrounds and ſupports the other parts of the flower.

The cups of flowers are very various in their ſtructure, and on that account diſtinguiſhed by ſeveral names, as *perianthium*, *involucrum*, *ſpatha*, *gluma*, &c. See Botany.

CALZADA, a town of Old Caſtile in Spain, ſeated on the river Leglera. W. Long. 2. 47. N. Lat. 42. 12.

CAMÆA, in *Natural Hiſtory*, a genus of the ſemipellucid gems, approaching to the onyx ſtructure, being compoſed of zones, and formed on a cryſtalline baſis: but having their zones very broad and thick, and laid alternately one on another, with no common matter between; uſually leſs tranſparent, and more debaſed with earth, than the onyxes.

Camaieu ‖ Camaldulians.

1. One ſpecies of the camæa is the dull-looking onyx, with broad, black, and white zones; and is the camæa of the moderns, and the Arabian onyx. This ſpecies is found in Egypt, Arabia, Perſia, and the Eaſt-Indies. 2. Another ſpecies of the camæa is the dull broad-zoned, green and white camæa, or the jaſpi-camæo of the Italians: it is found in the Eaſt Indies, and in ſome parts of America. 3. The third is the hard camæa, with broad white and cheſnut-coloured veins. 4. The hard camæa, with bluiſh, white, and fleſh-coloured broad veins, being the ſardonyx of Pliny's time, only brought from the Eaſt Indies.

CAMAIEU, or Camayeu, a word uſed to expreſs a peculiar ſort of onyx: alſo by ſome to expreſs a ſtone, whereon are found various figures, and repreſentations of landſcapes, &c. formed by a kind of *luſus naturæ*, ſo as to exhibit pictures without painting. The word comes from *camahuia*, a name the Orientals give to the onyx, when they find, in preparing it, another colour; as who ſhould ſay, *a ſecond ſtone*. It is of theſe *camaieux* Pliny is to be underſtood when he ſpeaks of the manifold picture of gems, and the party-coloured ſpots of precious ſtones: *Gemmarum pictura tam multiplex lapidumque tam diſcolores maculæ*.

Camaieu is alſo applied by others to thoſe precious ſtones, as onyxes, cornelians, and agates, whereon the lapidaries employ their art to aid nature, and perfect theſe repreſentations. See Camæa.

Camaieu is alſo frequently applied to any kind of gem, whereon figures may be engraven either indentedly or in relievo. In this ſenſe the lapidaries of Paris are called in their ſtatutes, *cutters of camayeux*.

A ſociety of learned men at Florence undertook to procure all the *cameos* or *camayeux* and intaglios in the great duke's gallery to be engraven; and began to draw the heads of divers emperors in *cameos*.

Camaieu is alſo uſed for a painting, wherein there is only one colour; and where the lights and ſhadows are of gold, wrought on a golden or azure ground. When the ground is yellow, the French call it *cirage*; when gray, *griſſaile*. This kind of work is chiefly uſed to repreſent baſſo relievos: the Greeks call pieces of this ſort μονοχρωματα.

CAMALDULIANS, Camaldunians, or Camaldolites, an order of religious, founded by Romuald, an Italian fanatic, in 1023, in the horrible deſert of Camaldoli, otherwiſe called Campo Malduli, ſituated in the ſtate of Florence, on the Apennines. Their rule is that of St Benedict; and their houſes, by the ſtatutes, are never to be leſs than five leagues from cities. The *Camaldulians* have not borne that title from the beginning of their order; till the cloſe of the eleventh century they were called *Romualdins*, from the name of their founder. Till that time, *Camaldulian* was a particular name for thoſe of the deſert Camaldoli; and D. Grandi obſerves, was not given to the whole order in regard it was in this monaſtery that the order commenced, but becauſe the regulation was beſt maintained here.

Guido Grandi, mathematician of the grand duke of Tuſcany,

Camaldunum || Camarina.

Tuſcany, and a monk of this order, has publiſhed *Camaldulian* Diſſertations, on the origin and eſtabliſhment of it.

The *Camaldulites* were diſtinguiſhed into two claſſes, of which the one were COENOBITES, and the other EREMITES.

CAMALODUNUM, in *Ancient Geography*, a town of the Trinobantes, the firſt Roman colony in Britain, of veterans under the emperor. From the Itineraries it appears to have ſtood where now Malden ſtands. It continued to be an open place under the Romans; a place of pleaſure rather than ſtrength; yet not unadorned with ſplendid works, as a theatre and a temple of Claudius: which the Britons conſidered as badges of ſlavery, and which gave riſe to ſeveral ſeditions and commotions. It ſtands on a bay of the ſea, at the mouth of the Chelmer, in the county of Eſſex: the modern name is curtailed from the ancient.

CAMARANA, an iſland of Arabia, in the Red ſea, whoſe inhabitants are little and black. It is the beſt of all the iſlands in this ſea, and here they fiſh for coral and pearls. N. Lat. 15. 0.

CAMASSEI, or CAMACE, ANDREA, painter of hiſtory and landſcape, was born at Bevagna, and at firſt learned the principles of deſign and colouring from Domenichino; but afterwards he ſtudied in the ſchool of Andrea Sacchi, and proved a very great painter. He was employed in St Peter's at Rome, as alſo at St John Lateran; and his works are extremely admired, for the ſweetneſs of his colouring, the elegance of his thoughts and deſign, and likewiſe for the delicacy of his pencil. Sandrart laments that the world was deprived of ſo promiſing a genius, in the very bloom of life, when his reputation was daily advancing. He died in 1657. At St John Lateran are to be ſeen, the Battle of Conſtantine and Maxentius; and the Triumph of Conſtantine; which are noble and grand compoſitions; and they afford ſufficient proofs of the happineſs of his invention, and the correctneſs of his execution. Alſo at Wilton, the ſeat of the earl of Pembroke, there is a picture of Venus with the Graces, ſaid to be by the hand of Camaſſei.

CAMARCUM, in *Ancient Geography*, the capital of the Nervii, a people of Gallia Belgica, (Antonine, Peutinger); before whoſe time no mention was made of it. Now Cambray, capital of the Cambreſis, in French Flanders. E. Long. 3. 15. Lat. 50. 15.

CAMARINA, in *Ancient Geography*, a city of Sicily, built by the Syracuſans on an eminence near the ſea, in the ſouth of Sicily, to the weſt of the promontory Pachynum, between two rivers, the Hipparis and Oanus. Of ſo famous a city nothing now remains but its name and ancient walls, a mile and a half in compaſs, with the ſlight remains of houſes: now called *Camarana*.

CAMARINA Palus, a marſh or lake, near the city Camarina, and from which it took its name. In a time of drought, the ſtench of the lake produced a peſtilence; upon which the inhabitants conſulted the oracle, whether they ſhould not quite drain it. The oracle diſſuaded them: they notwithſtanding drained it, and opened a way for their enemies to come and plunder their city: hence the proverb *Ne moveas Camarinam*, that is, not to remove one evil to bring on a greater. Now *Lago di Camarana*, ſituated in a beautiful plain, under the very walls of Camarina, and of a triangular form.

Camayeu || Camblet.

CAMAYEU. See CAMAIEU.

CAMBAIA, or CAMPAY, a town of Aſia, in India, and in the peninſula on this ſide the Ganges; capital of a province of the ſame name; but more commonly called *Guzerat*. It is ſeated at the bottom of a gulf of the ſame name, on a ſmall river; is a large place with high walls, and has a pretty good trade. The product and manufactures are inferior to few towns in India, for it abounds in corn, cattle, and ſilk; and cornelian and agate ſtones are found in its rivers. The inhabitants are noted for embroidery; and ſome of their quilts have been valued at 40l. It is ſubject to the Great Mogul. E. Long. 72. 15. N. Lat. 22. 30.

CAMBAYES, in commerce, cotton cloths made at Bengal, Madras, and ſome other places on the coaſt of Coromandel. They are proper for the trade of Marſeilles, whither the Engliſh at Madras ſend great numbers of them. Many are alſo imported into Holland.

CAMBER, according to our monkiſh hiſtorians, one of the three ſons of Brute, who, upon his father's death, had that part of Britain aſſigned him for his ſhare, called from him *Cambria*, now *Wales*.

CAMBER-Beam, among builders, a piece of timber in an edifice cut archwiſe, or with an obtuſe angle in the middle, commonly uſed in platforms, as church leads, and on other occaſions where long and ſtrong beams are required.

CAMBERED DECKS, among ſhip-builders. The deck or flooring of a ſhip is ſaid to be cambered, or to lie cambering, when it is higher in the middle of the ſhip's length, and droops towards the ſtem and ſtern, or the two ends. Alſo when it lies irregular; a circumſtance which renders the ſhip very unfit for war.

CAMBERT, a French muſician in the 17th century, was at firſt admired for the manner in which he touched the organ, and became ſuperintendant of the muſic to Anne of Auſtria the queen mother. The Abbé Perrin aſſociated him in the privilege he obtained of his majeſty, of ſetting up an opera in 1669. Cambert ſet to muſic two paſtorals, one entitled *Pomona*, the other *Ariadne*, which were the firſt operas given in France. He alſo wrote a piece entitled *The pains and pleaſures of love*. Theſe pieces pleaſed the public; yet, in 1672, Lully obtaining the privilege of the opera, Cambert was obliged to come to England, were he became ſuperintendant of the muſic to King Charles II. and died there in 1677.

CAMBIO, an Italian word which ſignifies *exchange*, commonly uſed in Provence, and in ſome other countries, particularly Holland.

CAMBIST, a name given in France to thoſe who trade in notes and bills of exchange. The word *cambiſt*, though a term of antiquity, is even now a technical word, of ſome uſe among merchants, traders, and bankers. Some derive it from the Latin *cambium*, or rather *cambio*.

CAMBLET, or CHAMBLET, a ſtuff ſometimes of wool, ſometimes ſilk, and ſometimes hair, eſpecially that of goats, with wool or ſilk: in ſome, the warp

Cambodia || Cambogia.

warp is ſilk and wool twiſted together, and the woof hair.

The true or oriental camblet is made of the pure hair of a ſort of goat, frequent about Angora, and which makes the riches of that city, all the inhabitants whereof are employed in the manufacture and commerce of camblets. It is certain we find mentioned in middle-age writers ſtuffs made of camels hair, under the denominations of *cameletum* and *camelinum*, whence probably the origin of the term; but theſe are repreſented as ſtrangely coarſe, rough, and prickly, and ſeem to have been chiefly uſed among the monks by way of mortification, as the hair ſhirt of latter times.

We have no camblets made in Europe of the goats hair alone; even at Bruſſels, they find it neceſſary to add a mixture of woollen thread.

England, France, Holland, and Flanders, are the chief places of this manufacture. Bruſſels exceeds them all in the beauty and quality of its camblets: thoſe of England are reputed the ſecond.

Figured CAMBLETS, are thoſe of one colour, whereon are ſtamped various figures, flowers, foliage, &c. by means of hot irons, which are a kind of moulds, paſſed together with the ſtuff under a preſs. Theſe are chiefly brought from Amiens and Flanders; the commerce of theſe was anciently much more conſiderable than at preſent.

Watered CAMBLETS, thoſe which, after weaving, receive a certain preparation with water; and are afterwards paſſed under a hot preſs, which gives them a ſmoothneſs and luſtre.

Waved CAMBLETS, are thoſe whereon waves are impreſſed, as on tabbies; by means of a calender, under which they are paſſed and repaſſed ſeveral times.

The manufacturers, &c. of camblets are to take care they do not acquire any falſe and needleſs plaits; it being almoſt impoſſible to get them out again. This is notorious even to a proverb; we ſay a perſon is like camblet he has taken his plait.

CAMBODIA, a kingdom of Aſia, in the Eaſt Indies, bounded on the north by the kingdom of Laos, on the eaſt by Cochin-China and Chiapa, and on the ſouth and weſt by the gulf and kingdom of Siam; divided by a large river called *Mecon*. The capital town is of the ſame name, ſeated on the weſtern ſhore of the ſaid river, about 150 miles north of its mouth. This country is annually overflowed in the rainy ſeaſon, between June and October; and its productions and fruits are much the ſame with thoſe uſually found between the tropics. E. Long. 104. 15. N. Lat. 12. 40.

CAMBODUNUM, (Itinerary); a town of the Brigantes in Britain; now in ruins, near Almonbury in Yorkſhire. Weſtcheſter, (Talbot.) Alſo a town of Vindelicia, on the Cambus; now Kempten in Suabia.

CAMBOGIA, in *Botany*: A genus of the monogynia order, belonging to the polyandria claſs of plants; and in the natural method ranking under the 38th order, *Tricoccæ*. The corolla is tetrapetalous; the calyx tetraphyllous; and the fruit is a pome with eight cells, and ſolitary ſeeds. There is but one ſpecies, the gutta, a native of India, which yields the gum-reſin known by the name of *gamboge* in the ſhops. See GAMBOGE.

Cambraſines || Cambric.

CAMBRASINES, in commerce, fine linen made in Egypt, of which there is a conſiderable trade at Cairo, Alexandria, and Roſetta, or Raſchit. They are called *cambraſines* from their reſemblance to cambrics.

CAMBRAY, an archiepiſcopal city, the capital of the Cambreſis, in the Low Countries, ſeated on the Scheldt. It is defended by good fortifications, and has a fort on the ſide of the river; and as the land is low on that ſide, they can lay the adjacent parts under water by means of ſluices. Its ditches are large and deep, and thoſe of the citadel are cut into a rock. Clodion became maſter of Cambray in 445. The Danes burnt it afterwards; ſince which time it became a free imperial city. It has been the ſubject of conteſt between the emperors, the kings of France, and the earls of Flanders. Francis I. let it remain neutral during the war with Charles V. but this laſt took poſſeſſion of it in 1543. After this it was given to John of Montluc by Henry III. of France, whom he created prince of Cambray; but the Spaniards took it from Montluc in 1593, which broke his heart. It continued under the dominion of the houſe of Auſtria till 1677, when the king of France became maſter of it, in whoſe hands it has continued ever ſince.

The buildings of Cambray are tolerably handſome, and the ſtreets fine and ſpacious. The place or ſquare for arms is of an extraordinary largeneſs, and capable of receiving the whole garriſon in order of battle. The cathedral dedicated to the Virgin Mary is one of the fineſt in Europe. The body of the church is very large, and there are rich chapels, the pillars of which are adorned with marble tombs that are of exquiſite workmanſhip, and add greatly to the beauty of the place. There are two galleries, one of which is of copper, finely wrought. The door of the choir is of the ſame metal, and well carved. The ſteeple of this church is very high, and built in the form of a pyramid; and from its top you have a view of the city, which is one of the fineſt and moſt agreeable in the Low Countries. There are nine pariſhes, four abbeys, and ſeveral convents for both ſexes. The citadel is very advantageouſly ſituated on high ground, and commands the whole city. Cambray is one of the moſt opulent and commercial cities in the Low Countries; and makes every year a great number of pieces of cambric, with which the inhabitants drive a great trade. E. Long. 3. 20. N. Lat. 50. 11.

CAMBRAY, *M. de Fenelon, archbiſhop of.* See FENELON.

CAMBRESIS, a province of France, in the Netherlands, about 25 miles in length. It is bounded on the north and eaſt by Hainault, on the ſouth by Picardy, and on the weſt by Artois. It is a very fertile and populous country; and the inhabitants are induſtrious, active, and ingenious. The trade conſiſts principally in corn, ſheep, very fine wool, and fine linen cloth. Cambray is the capital town.

CAMBRIA, a name for the principality of Wales.

CAMBRIC, in commerce, a ſpecies of linen made of flax, very fine and white; the name of which was originally derived from the city of Cambray, where they were firſt manufactured. They are now made at other places in France.

The

Cambridge. The manufacture of cambrics hath long ſince proved of extraordinary advantage to France. For many years it appeared that England did not in this article contribute leſs than 200,000l. per annum to the intereſt of France. This proved motive ſufficient to induce the parliament of Great Britain to enact many ſalutary laws to prevent this great loſs of our wealth. See 18 Geo. II. c. 38. and 21 Geo. II. c. 26. See alſo ſtat. 32. Geo. II. c. 32. and 4 Geo. III. c. 37. which regulates the cambric manufactory, not long ſince introduced into Winchelſea in Suſſex; but very ſoon aboliſhed. The cambrics now allowed in this country are manufactured in Scotland and Ireland. Any perſons convicted of wearing, ſelling (except for exportation), or making up for hire any cambric or French lawns, are liable to a penalty of 5l. by the two firſt ſtatutes cited above.

CAMBRIDGE, a town of England, and capital of the county of that name. It takes the name of Cambridge from the bridge over the Cam, which divides the town into two parts. Either it or a place in the neighbourhood was ſtyled *Camboritum*, in the time of the Romans. It ſuffered much during the wars with the Danes. Here was a caſtle built by William the Conqueror, of which the gatehouſe yet remains, and is now the county gaol. By Doomſday-book it appears that it then had ten wards, containing 387 houſes. In William Rufus's reign it was quite deſtroyed by Roger de Montgomery; but Henry I. beſtowed many privileges upon it to encourage its reſtoration, particularly an exemption from the power of the ſheriff, on condition of its paying yearly into the exchequer 100 merks (equivalent to 1000 pounds now), and from tolls, laſtage, pontage, paſſage, and ſtallage, in all fairs of his dominions. It was afterwards often plundered in the barons wars by the outlaws from the iſle of Ely, till Henry III. ſecured it by a deep ditch. In 1388, Richard II. held a parliament here. In the rebellion of Wat Tyler and Jack Straw againſt that prince, the univerſity records were taken and burnt in the market place.

The modern town is about one mile long from ſouth to north, and about half a mile broad in the middle, diminiſhing at the extremities. It has 14 pariſh churches, of which two are without any towers. It contains above 1200 houſes; but the private buildings are neither elegant nor large, owing chiefly to their being held on college or corporation leaſes. It is governed by a mayor, high ſteward, recorder, 13 aldermen and 24 common council men, a town clerk, &c. Its chief trade is water carriage from hence to Downham, Lynn, Ely, &c. The Jews being encouraged to ſettle in England by William I. and II. were very populous here for ſeveral generations, and inhabited that ſtreet now called the *Jewry*. They had a ſynagogue, ſince converted to a pariſh church, called from the ſhape of its tower *Round Church*; though others are of opinion that it was built by the Knights Templars, it bearing a reſemblance to the Temple church in London. The market place is ſituated in the middle of the town, and conſiſts of two ſpacious oblong ſquares united together; at the top of the angle ſtands the ſhire hall, lately erected at the expence of the county. At the back of the ſhire hall is the town hall and gaol. In the market place, fronting the ſhire hall, is a remarkably handſome ſtone conduit, to which water is conveyed Cambridge. by an aqueduct, which was the benefaction of the celebrated Hobſon, a carrier in the reign of James I. who was a native of this town. A fine road for the benefit of the inhabitants and ſtudents was made a few years ſince for four miles, from this town to Gogmagog hills, purſuant to the will of Mr Worts. The late Dr Addenbroke alſo left it 4000l. towards building and furniſhing an hoſpital for the cure of poor diſeaſed people gratis; of which charity the maſter of Catharine hall is a truſtee: which hoſpital has been erected at the ſouth-eaſt end of the town. At a little diſtance from Bennet college is the botanic garden of five acres, and a large houſe for the uſe of the governors and the reſidence of the curator, given to the univerſity by the late Dr Walker, who ſettled an eſtate on it towards its ſupport; to which the late Mr Edward Betham added a very conſiderable benefaction. The town has fairs on June 24. and Auguſt 14.

The glory of Cambridge is its univerſity; but when it had its beginning is uncertain. At firſt there was no public proviſion for the accommodation or maintenance of the ſcholars; but afterwards inns began to be erected by pious perſons for their reception, and in the time of Edward I. colleges began to be built and endowed. This univerſity, not inferior to any in Chriſtendom, conſiſts of 12 colleges and 4 halls, which have the ſame privileges as the colleges. The whole body, which is commonly about 1500, enjoys very great privileges granted by ſeveral of our ſovereigns; but it was James I. who empowered it to ſend two members to parliament, as the town had done from the firſt. The univerſity is governed, 1. By a chancellor, who is always ſome nobleman, and may be changed every three years, or continued longer by the tacit conſent of the univerſity. 2. By a high ſteward, choſen by the ſenate, and holding his place by patent from the univerſity. 3. By a vice-chancellor, who is the head of ſome college or hall, and choſen yearly by the body of the univerſity, the heads of the colleges naming two. 4. By two proctors choſen every year, according to the cycle of colleges and halls; as are two taxors, who with the proctors regulate the weights and meaſures, as clerks of markets. The proctors alſo inſpect the behaviour of the ſcholars, who muſt not be out of their colleges after nine at night. Here are alſo 2 moderators, 2 ſcrutators, a commiſſary, public orator, 2 librarians, a regiſter, a ſchool-keeper, 3 eſquire beadles and a yeoman beadle, 18 profeſſors, and the caput, conſiſting of the vice-chancellor, a doctor of divinity, a doctor of laws, a doctor of phyſic, a regent and a non-regent maſter of arts. Henry VI. granted it the power to print all books of any kind within itſelf, a privilege which Oxford had not. The ſenate houſe of the univerſity is an elegant building of the Corinthian order, coſt near 16,000l. building; in which on the north ſide is a fine ſtatue of George I. erected in 1739 at the expence of the late Lord Townſhend; oppoſite to this on the ſouth ſide is another of George II. erected in 1765 at the expence of the late duke of Newcaſtle: at the eaſt end, on each ſide of the entrance, are two others; one, the late duke of Somerſet, after the Vandyke taſte; the other, an Italian emblematical figure of Gloria. This is allowed to be the moſt ſuperb room in England, being 101 feet long

Cambridge. long, 42 broad, and 32 high; and it has a gallery which can contain 1000 perſons. This building forms the north ſide of the quadrangle, as the ſchools and public library do the weſt, the ſchools being the ground floor, and the library over them ſurrounding a ſmall court. North of the philoſophy ſchool is the repoſitory of Dr Woodward's foſſils, ores, ſhells, &c. The doctor, togther with that collection and a part of his library, left a ſum of money to this univerſity for erecting a profeſſorſhip for natural philoſophy, with a proviſion of 150l. a-year for ever. At the ſouth-eaſt corner of this building is an elegant geometrical ſtone ſtaircaſe which leads to the old library, and conſiſts of 18 claſſes; at the end of which is an elegant ſquare room, in which are depoſited the MSS. and a valuable cabinet of oriental books and curioſities, &c. This room opens to two other rooms, containing 26 large claſſes conſiſting of 30,000 volumes preſented to the univerſity by George I. being the entire collection of Dr Moore biſhop of Ely, and purchaſed of the doctor's executors by his majeſty for 6000 guineas; before which his majeſty gave the univerſity 2000l. to defray the expence of fitting up the apartments and erecting claſſes for their reception; they conſiſt of the firſt editions of the Greek and Latin claſſics and hiſtorians, and the greateſt part of the works of the firſt printers; large collections of prints by the greateſt maſters; and a valuable MS. of the Goſpels and Acts of the Apoſtles on vellum in Greek and Latin capitals, given to the univerſity by Theodore Beza, and ſuppoſed to be as old as any MS. extant. The other part of the library has been rebuilt in an elegant manner, and forms the weſt ſide of the intended quadrangle. The books which are contained in the laſt room are part of the old library augmented with a conſiderable number of the beſt modern books, ſeveral of which are preſents from foreign ſovereigns and eminent men. The ſouth ſide of the quadrangle is deſigned for a building to contain the printing office, &c. of the univerſity, for which preparations began lately to be made by puiling down the old buildings on the ſpot. St Mary's church forms the eaſt ſide of this quadrangle: here the univerſity have their public ſermons; and the pulpit, which ſtands in the centre of the church and faces the chancel, has no ſoundingboard. In a grand gallery over part of the chancel is a ſeat for the chancellor, vice-chancellor, &c. George I. when he gave the books, alſo eſtabliſhed a profeſſor of modern hiſtory and modern languages in this univerſity, with a ſalary of 400l. for himſelf and two perſons under him qualified to inſtruct in that branch 20 ſcholars, to be nominated by the king, each of whom is obliged to learn at leaſt two of the languages. A fellowſhip is founded at Magdalen college, appropriated to the gentlemen of Norfolk, and called *the travelling Norfolk fellowſhip*. All the libraries in Cambridge, except that of King's college, are lending libraries: and thoſe at Oxford are ſtudying libraries. The different colleges are as follow:

1. St Peter's, the moſt ancient, and the firſt on entering the town from London, conſiſting of two courts, ſeparated by a cloiſter and gallery. The largeſt is 144 feet long, and 84 broad. The buildings in this court have been lately repaired in an elegant manner. The leſſer court is divided by the chapel, which is a fine old building, 54 feet long, 27 broad, and 27 high. Cambridge. This college was founded 1257. There are three colleges in Oxford which diſpute the antiquity with this. Cambridge and Oxford were univerſities long before they were poſſeſſed of any colleges in their own right, the ſtudents then lodging and boarding with the townſmen, and they then hired hotels for their exerciſes and diſputations. A hotel or hall, now denominated *Pythagoras's ſchool*, ſituated on the weſt ſide of the river, is one of the ancient hotels that remain undemoliſhed, and in which Eraſmus read his firſt Greek lectures in England. 2. Clare hall, on the bank of the river, over which it has an elegant ſtone bridge, was founded 1326, conſiſting of one grand court 150 feet long and 111 broad. The front of this building that faces the fields has the appearance of a palace. To this college a new chapel has been added. 3. Pembroke hall is near St Peter's college, and was founded in 1343; it conſiſts of two courts. It has an elegant chapel built by Sir Chriſt. Wren. 4. Corpus Chriſti or Bennet college, founded in 1350, has but a mean appearance, but is poſſeſſed of a remarkably large collection of valuable and curious ancient manuſcripts. 5. Trinity hall, on the north of Clare hall, near the river, was founded in 1351; it is a ſmall but remarkably neat building. 6. Gonvil and Caius college is near the middle of the town, north of the ſenate houſe, and has three courts. It was founded 1348, and augmented 1557. 7. King's college, the moſt noble foundation in Europe, was firſt endowed by Henry VI. The old court reſembles a decayed caſtle more than a college. The new building is very magnificent, near 300 feet long. The chapel is one of the fineſt pieces of Gothic architecture now remaining in the world. It is 304 feet long, 73 broad on the outſide and 40 within, and 91 high; and yet not a ſingle pillar to ſuſtain its ponderous roofs, of which it has two: the firſt is of ſtone, moſt curiouſly carved; the other of wood, covered with lead, between which is a vacancy of 10 feet. There is ſuch a profuſion of carvings both within and without as is nowhere to be equalled. Henry VII. enlarged it 188 feet in length, and Henry VIII. gave the elegant ſtalls and organ gallery, with its inimitable carvings, where are the coats of arms of that king and thoſe of Anne Boleyn quartered. He gave alſo the elegant painted glaſs windows, which are in fine preſervation, and were permitted by Cromwell to be preſerved when almoſt every other in England was deſtroyed, as he had a particular regard for this univerſity where he had his education, and for the town which he had repreſented in parliament. A new altar has been lately erected, which correſponds with the architecture of the building, embelliſhed with an antique painting of Chriſt taking down from the croſs, purchaſed in Italy, and preſented to the college by the earl of Carliſle. In this chapel are put up the Spaniſh colours taken at the reduction of Manilla by Colonel Draper, a member of this college. This college has an ancient ſtone bridge over the Cam. 8. Queen's college near the river, ſouth of King's, was founded 1448, and conſiſts of two courts, with a fine grove and gardens on both ſides of the river, connected with each other and the college by two wooden bridges, one of which is of a curious ſtructure. 9. Catharine hall is eaſt of Queen's, and its principal front on the

Cambridge. weſt, the moſt extenſive and regular in the univerſity. It contains only one court 180 feet long and 120 broad, and was founded in 1475. 10. Jeſus college is at the eaſt end of the town, ſurrounded by groves and gardens. The principal front faces the ſouth, 180 feet long, regularly built and faſhed: it was originally a Benedictine convent, and converted to the preſent uſe 1576. 11. Chriſt's college is oppoſite to St Andrew's church, on the eaſt ſide of the town; and was founded by Henry VII's mother in 1505. It has lately had a thorough repair, and is now a neat and beautiful ſtructure. 12. St John's college was founded by the ſame lady in 1509, on the ſite of a diſſolved priory. It conſiſts of three courts, and has a large library filled with ſcarce and valuable books. To this college belongs a fine ſtone bridge over the river, which leads to their grand walks. 13. Magdalen college, the only one that ſtands on the north ſide of the river, near the great bridge, conſiſts of two courts, and was founded in 1519. 14. Trinity college is eaſt of the river, having St John's college on the north and Caius's college and Trinity hall on the ſouth. It contains two large quadrangles, the firſt of which is 344 feet long and 280 broad. It has two noble entrances; and on the north ſide of it is the chapel, 204 feet long, 34 broad, and 44 high. It has every grand ornament, and the much admired ſtatue of Sir Iſaac Newton, who was a ſtudent in this college. The hall is above 100 feet long, 40 broad, and 50 high. The inner court is eſteemed the fineſt in the univerſity, and ſurpaſſes any in Oxford. It is very ſpacious, and has an elegant cloiſter of ſtone pillars, ſupporting grand apartments; on the weſt is the library, the moſt elegant ſtructure of the kind in the kingdom, 190 feet long, 40 broad, and 38 high within. Its entrance is by a ſtaircaſe, the ſteps black marble, and the walls incruſted with ancient Roman monuments. The entrance into the library is by folding doors at the north end. Its inſide appearance is inexpreſſibly grand, having at the ſouth end (lately erected) a beautiful painted glaſs window of his preſent majeſty in his robes; and the claſſes are large, beautiful, and noble, well ſtocked with books, manuſcripts, &c. Its outſide has every ſuitable embelliſhment, and was erected by Sir Chriſtopher Wren at the expence of near 20,000l. Under this building is a ſpacious piazza of equal dimenſions; out of which open three gates to a lawn that leads to the river, over which is a new elegant cycloidal bridge of three arches, leading to extenſive walks. In the middle is a remarkable viſta. This college was founded on the ſite of two other colleges and a hall in 1546 by Henry VIII. 15. Emanuel college is at the ſouth-eaſt end of the town; conſiſts of two courts, the principal of which is very neat; and was built on the ſite of a Dominican convent. It has been lately in a great part rebuilt and elegantly embelliſhed. 16. Sidney-Suſſex college is in Bridge-ſtreet. Its hall is elegant, but the chapel remarkable only for ſtanding north and ſouth, as others do eaſt and weſt. The number of inhabitants in the town of Cambridge in 1801, was 10,087.

CAMBRIDGESHIRE, an inland county of England, bounded on the eaſt by Norfolk and Suffolk, on the ſouth by Eſſex and Hertfordſhire, on the weſt by Bedfordſhire and Huntingdonſhire, and on the north by Lincolnſhire. Prior to the arrival of the Romans it was included in the ancient diviſion of the Iceni; and after their conqueſt, in the third province of Flavia Cæſarienſis, which reached from the Thames to the Humber. During the Heptarchy it belonged to the kingdom of Eaſt Angles, the ſixth kingdom, which began in 575, and ended in 792, having had 14 kings; and it is now included in the Norfolk circuit, the dioceſe of Ely, and province of Canterbury, except a ſmall part which is in the dioceſe of Norwich. It is about 40 miles in length from north to ſouth, and 25 in breadth from eaſt to weſt, and is 130 miles in circumference, containing near 570,000 acres. It has about 17,400 houſes, 140,000 inhabitants: is divided into 17 hundreds, in which are one city, Ely; 8 market towns, viz. Cambridge which is the ſhire town and a celebrated univerſity, Caxton, Linton, Merch, Newmarket, Soham, Wiſbeach, Thorney, and part of Royſton; 220 villages, 64 pariſhes: ſends 2 members to parliament (excluſive of 2 for the town and 2 for the univerſity), pays one part of the land tax, and provides 480 men in the militia. Its only rivers are the Cam, the Nene, and the Ouſe. A conſiderable tract of land in this county is diſtinguiſhed by the name of the Iſle of Ely. It conſiſts of fenny ground, divided by innumerable channels and drains: and is part of a very ſpacious level, containing 300,000 acres of land, extending into Norfolk, Suffolk, Huntingdonſhire, and Lincolnſhire. The Iſle of Ely is the north diviſion of the county, and extends ſouth almoſt as far as Cambridge. The whole level of which this is part, is bounded on one ſide by the ſea, and on the others by uplands: which taken together form a rude kind of ſemicircle reſembling a horſe ſhoe. The air is very different in different parts of the country. In the fens it is moiſt and foggy, and therefore not ſo wholeſome; but in the ſouth and eaſt parts it is very good, theſe being much drier than the other: but both, by late improvements, have been rendered very fruitful, the former by draining, and the latter by cinquefoil: ſo that it produces plenty of corn, eſpecially barley, ſaffron, and hemp, and affords the richeſt paſtures. The rivers abound with fiſh, and the fens with wild fowl. The principal manufactures of the county are malt, paper, and baſkets. As the above tract appears to have been dry land formerly, the great change it has undergone muſt have been owing either to a violent breach and inundation of the ſea or to earthquakes. As the towns in and about the fens were great ſufferers by the ſtagnation of the waters in ſummer, and want of proviſions in winter, many attempts were made to drain them, but without ſucceſs, until the time of Charles I. in which, and that of his ſon, the work was happily completed, and an act of parliament paſſed, by which a corporation was eſtabliſhed for its preſervation and government. By the ſame act, 83,000 acres were veſted in the corporation and 10,000 in the king. In theſe fens are a great many DECOYS, in which incredible numbers of ducks, and other wild fowl, are caught during the ſeaſon. The population of the county of Cambridge, as it was taken in 1801, amounted to 89,349 perſons.

Cambridgeſhire, New Cambridge.

New CAMBRIDGE, a town of New England about three

Cambridge. three miles from Boſton, remarkable for an univerſity conſiſting of three colleges. W. Long. 70. 4. N. Lat. 42. 0.

CAMBRIDGE *Manuſcript*, a copy of the Goſpels and Acts of the Apoſtles in Greek and Latin. Beza found it in the monaſtery of Irenæus at Lyons in the year 1562, and gave it to the univerſity of Cambridge in 1582. It is a quarto ſize, and written on vellum; 66 leaves of it are much torn and mutilated, ten of which are ſupplied by a later tranſcriber. Beza conjectures, that this manuſcript might have exiſted ſo early as the time of Irenæus: Wetſtein apprehends that it either returned or was firſt brought from Egypt into France; that it is the ſame copy which Druthmar, an ancient expoſitor who lived about the year 840, had ſeen, and which, he obſerves, was aſcribed to St Hilary; and that R. Stephens had given a particular account of it in his edition of the New Teſtament in 1550. It is uſually called *Stephens's ſecond manuſcript*. Mill agrees with F. Simon in opinion, that it was written in the weſtern part of the world by a Latin ſcribe, and that it is to a great degree interpolated and corrupted: he obſerves that it agrees ſo much with the Latin Vulgate, as to afford reaſon for concluding, that it was corrected or formed upon a corrupt and faulty copy of that tranſlation. From this and the Clermont copy of St Paul's Epiſtles, Beza publiſhed his larger Annotations in 1582.

CAMBYSES. See (*Hiſtory of*) PERSIA.

CAMDEN, WILLIAM, the great antiquarian, was born in London in the year 1551. His father was a native of Litchfield in Staffordſhire, who ſettling in London, became a member of the company of paperſtainers, and lived in the Old Bailey. His mother was of the ancient family of Curwen, of Workington, in Cumberland. He was educated firſt at Chriſt's hoſpital, and afterwards at St Paul's ſchool: from thence he was ſent, in 1566, to Oxford, and entered ſervitor of Magdalen college; but being diſappointed of a demy's place, he removed to Broadgate hall, and ſomewhat more than two years after, to Chriſt-church, where he was ſupported by his kind friend and patron Dr Thornton. About this time he was a candidate for a fellowſhip of All-ſouls college, but loſt it by the intrigues of the Popiſh party. In 1570, he ſupplicated the regents of the univerſity to be admitted bachelor of arts; but in this alſo he miſcarried. The following year Mr Camden came to London, where he proſecuted his favourite ſtudy of antiquity, under the patronage of Dr Goodman, dean of Weſtminſter, by whoſe intereſt he was made ſecond maſter of Weſtminſter ſchool in 1575. From the time of his leaving the univerſity to this period, he took ſeveral journeys to different parts of England, with a view to make obſervations and collect materials for his *Britannia*, in which he was now deeply engaged. In 1581 he became intimately acquainted with the learned Preſident Briſſon, who was then in England; and in 1586 he publiſhed Camden. the firſt edition of his Britannia; a work which, though much enlarged and improved in future editions, was even then eſteemed an honour to its author, and the glory of its country. In 1593 he ſucceeded to the head maſterſhip of Weſtminſter ſchool on the reſignation of Dr Grant. In this office he continued till 1597, when he was promoted to be Clarencieux king at arms. In the year 1600 Mr Camden made a tour to the north, as far as Carliſle, accompanied by his friend Mr (afterwards Sir Robert) Cotton. In 1606 he began his correſpondence with the celebrated Preſident de Thou, which continued to the death of that faithful hiſtorian. In the following year he publiſhed his laſt edition of the Britannia, which is that from which the ſeveral Engliſh tranſlations have been made; and in 1608, he began to digeſt his materials for a hiſtory of the reign of Queen Elizabeth. In 1609, after recovering from a dangerous illneſs, he retired to Chiſlehurſt in Kent, where he continued to ſpend the ſummer months during the remainder of his life. The firſt part of his annals of the queen did not appear till the year 1615, and he determined that the ſecond volume ſhould not appear till after his death (A). The work was entirely finiſhed in 1617; and from that time he was principally employed in collecting more materials for the further improvement of his Britannia. In 1622, being now upwards of 70, and finding his health decline apace, he determined to loſe no time in executing his deſign of founding a hiſtory lecture in the univerſity of Oxford. His deed of gift was accordingly tranſmitted by his friend Mr Heather to Mr Gregory Wheare, who was, by himſelf, appointed his firſt profeſſor. He died at Chiſlehurſt in 1623, in the 73d year of his age; and was buried with great ſolemnity in Weſtminſter abbey in the ſouth aiſle, where a monument of white marble was erected to his memory. Camden was a man of ſingular modeſty and integrity; profoundly learned in the hiſtory and antiquities of this kingdom, and a judicious and conſcientious hiſtorian. He was reverenced and eſteemed by the literati of all nations, and will be ever remembered as an honour to the age and country wherein he lived. Beſides the works already mentioned, he was author of an excellent Greek grammar, and of ſeveral tracts in Hearne's collection. But his great and moſt uſeful work, the *Britannia*, is that upon which his fame is chiefly built. The edition above mentioned, to which he put his laſt hand, was correctly printed in folio, much augmented, amended where it was neceſſary, and adorned with maps. It was firſt tranſlated into Engliſh, and publiſhed in folio at London, in 1611, by the laborious Dr Philemon Holland, a phyſician of Coventry, who is thought to have conſulted our author himſelf; and therefore great reſpect has been paid to the additions and explanations that

(A) The reign of Queen Elizabeth was ſo recent when the firſt volume of the Annals was publiſhed, that many of the perſons concerned, or their dependents, were ſtill living. It is no wonder, therefore, that the honeſt hiſtorian ſhould offend thoſe whoſe actions would not bear inquiry. Some of his enemies were clamorous and troubleſome; which determined him not to publiſh the ſecond volume during his life; but that poſterity might be in no danger of diſappointment, he depoſited one copy in the Cotton library, and tranſmitted another to his friend Dupuy at Paris. It was firſt printed at Leyden in 1625.

Camel || Cameo.

occur therein, on a ſuppoſition that they may belong to Camden. But in a later edition of the ſame tranſlation, publiſhed in 1636, the Doctor has taken liberties which cannot either be defended or excuſed. A new tranſlation, made with the utmoſt fidelity from the laſt edition of our author's work, was publiſhed in 1695, by Edmund Gibſon of Queen's college in Oxford, afterwards biſhop of London; in which, beſides the addition of notes, and of all that deſerved to be taken notice of in Dr Holland's firſt edition, which though thrown out of the text, is preſerved at the bottom of the page, there are many other augmentations and improvements, all properly diſtinguiſhed from the genuine work of the author, as they ought to be: and the ſame judicious method obtained in the next edition of the ſame performance, which was juſtly conſidered as the very beſt book of its kind that had been hitherto publiſhed. But the public has been recently put in poſſeſſion of a new tranſlation, and ſtill more improved edition, by that learned and induſtrious topographer Mr Gough, under whoſe hands it has been enlarged to near double the ſize of the laſt of the preceding editions.

CAMEL, in *Zoology*. See CAMELUS.

CAMEL, in *Mechanics*, a kind of machine uſed in Holland for raiſing or lifting ſhips, in order to bring them over the Pampus, which is at the mouth of the river Y, where the ſhallowneſs of the water hinders large ſhips from paſſing. It is alſo uſed in other places, particularly at the dock of Peterſburgh, the veſſels built here being in their paſſage to Cronſtadt lifted over the bar by means of camels. Theſe machines were originally invented by the celebrated De Wit, for the purpoſe above mentioned; and were introduced into Ruſſia by Peter the Great, who obtained the model of them when he worked in Holland as a common ſhipwright. A camel is compoſed of two ſeparate parts, whoſe outſides are perpendicular, and whoſe inſides are concave, ſhaped ſo as to embrace the hull of a ſhip on both ſides. Each part has a ſmall cabin with ſixteen pumps and ten plugs, and contains 20 men. They are braced to a ſhip underneath by means of cables, and entirely encloſe its ſides and bottom; being then towed to the bar, the plugs are opened, and the water admitted until the camel ſinks with the ſhip and runs aground. Then, the water being pumped out, the camel riſes, lifts up the veſſel, and the whole is towed over the bar. This machine can raiſe the ſhip eleven feet, or, in other words, make it draw eleven feet leſs water.

CAMELFORD, a borough town of Cornwall in England, conſiſting of about 100 houſes, badly built; but the ſtreets are broad and well paved. W. Long. 5. 4. N. Lat. 50. 40. It ſends two members to parliament; and gives title of baron to Thomas Pitt, elder brother of the great earl of Chatham.

CAMELIA. See BOTANY *Index*.

CAMELODUM. See CAMALODUNUM.

CAMELOPARDALIS, in *Zoology*, the trivial name of a ſpecies of CERVUS. See MAMMALIA *Index*.

CAMELUS, or CAMEL, in *Zoology*, a genus of quadrupeds belonging to the order of pecora. See MAMMALIA *Index*.

CAMEO. See CAMAIEU.

CAMERA ÆOLIA, a contrivance for blowing the fire, for the fuſion of ores, without bellows; by means of water falling through a funnel into a cloſe veſſel, which ſends from it ſo much air or vapour as continually blows the fire: if there be the ſpace of another veſſel for it to expatiate in by the way, it there lets fall its humidity, which otherwiſe might hinder the work. This contrivance was named *camera Æolia* by Kircher.

Camera Æolia || Camera Obſcura.

CAMERA Lucida, a contrivance of Dr Hook for making the image of any thing appear on a wall in a light room, either by day or night. Oppoſite to the place or wall where the appearance is to be, make a hole of at leaſt a foot in diameter, or if there be a high window with a caſement of this dimenſion in it, this will do much better without ſuch hole or caſement opened.

At a convenient diſtance, to prevent its being perceived by the company in the room, place the object or picture intended to be repreſented, but in an inverted ſituation. If the picture be tranſparent, reflect the ſun's rays by means of a looking glaſs, ſo as that they may paſs through it towards the place of repreſentation; and to prevent any rays from paſſing aſide it, let the picture be encompaſſed with ſome board or cloth. If the object be a ſtatue, or a living creature, it muſt be much enlightened by caſting the ſun's rays on it, either by reflection, refraction, or both. Between this object and the place of repreſentation put a broad convex glaſs, ground to ſuch a convexity as that it may repreſent the object diſtinctly in ſuch place. The nearer this is ſituated to the object, the more will the image be magnified on the wall, and the further the leſs: ſuch diverſity depending on the difference of the ſpheres of the glaſſes. If the object cannot be conveniently inverted, there muſt be two large glaſſes of proper ſpheres, ſituated at ſuitable diſtances, eaſily found by trial, to make the repreſentations erect. This whole apparatus of object, glaſſes, &c. with the perſons employed in the management of them, are to be placed without the window or hole, ſo that they may not be perceived by the ſpectators in the room, and the operation itſelf will be eaſily performed. Phil. Tranſ. N° 38. p. 741. ſeq.

CAMERA Obſcura, or *Dark Chamber*, in *Optics*, a machine, or apparatus, repreſenting an artificial eye; whereon the images of external objects, received through a double convex glaſs, are exhibited diſtinctly, and in their native colours, on a white matter placed within the machine, in the focus of the glaſs.

The firſt invention of this inſtrument is aſcribed to Baptiſta Porta. See his *Magia Naturalis*, lib. xvii. cap. 6. firſt publiſhed at Frankfort about the year 1589 or 1591; the firſt four books of this work were publiſhed at Antwerp in 1560.

The *camera obſcura* affords very diverting ſpectacles; both by exhibiting images perfectly like their objects, and each clothed in their native colours; and by expreſſing, at the ſame time, all their motions; which latter no other art can imitate. By means of this inſtrument, a perſon unacquainted with deſigning will be able to delineate objects with the greateſt accuracy and juſtneſs, and another well verſed in painting will find many things herein to perfect his art. See the conſtruction under DIOPTRICS.

Cameraria || Cameronians.

CAMERARIA. See BOTANY *Index*.

CAMERARIUS, JOACHIM, one of the moſt learned writers of his time, was born in 1500, at Bamberg, a city of Franconia; and obtained great reputation by his writings. He tranſlated into Latin Herodotus, Demoſthenes, Xenophon, Euclid, Homer, Theocritus, Sophocles, Lucian, Theodoret, Nicephorus, &c. He publiſhed a catalogue of the biſhops of the principal ſees; Greek epiſtles; Accounts of his journeys, in Latin verſe; a Commentary on Plautus; the Lives of Helius Eobanus Heſſus, and Philip Melancthon, &c. He died in 1574.

CAMERARIUS, *Joachim*, ſon of the former, and a learned phyſician, was born at Nuremberg in 1534. After having finiſhed his ſtudies in Germany, he went into Italy, where he obtained the eſteem of the learned. At his return he was courted by ſeveral princes to live with them; but he was too much devoted to books, and the ſtudy of chemiſtry and botany, to comply. He wrote a Hortus Medicus, and ſeveral other works. He died in 1598.

CAMERATED, among builders, the ſame with vaulted or arched.

CAMERET BAY, in the province of Brittany in France, forms the harbour of Breſt. See BREST.

CAMERINO, a town of the eccleſiaſtical ſtate in Italy, ſituated in E. Long. 13. 7. N. Lat. 45. 5.

CAMERLINGO, according to Du Cange, ſignified formerly the pope's or emperor's treaſurer: at preſent, camerlingo is nowhere uſed but at Rome, where it denotes the cardinal who governs the eccleſiaſtical ſtate, and adminiſters juſtice. It is the moſt eminent office at the court of Rome, becauſe he is at the head of the treaſury. During a vacation of the papal chair, the cardinal camerlingo publiſhes edicts, coins money, and exerts every other prerogative of a ſovereign prince; he has under him a treaſurer-general, auditor-general, and 12 prelates called *clerks of the chamber*.

CAMERON, JOHN, one of the moſt famous divines among the Proteſtants of France in the 17th century, was born at Glaſgow in Scotland, where he taught the Greek tongue; and having read lectures upon that language for about a year, travelled, and became profeſſor at ſeveral univerſities, and miniſter at Bourdeaux. He publiſhed, 1. Theological lectures; 2. *Icon Johannis Cameronis*; and ſome miſcellaneous pieces. He died in 1625, aged 60.

CAMERONIANS, a ſect or party in Scotland, who ſeparated from the Preſbyterians in 1666, and continued to hold their religious aſſemblies in the fields.

The Cameronians took their denomination from Richard Cameron, a famous field preacher, who refuſing to accept the indulgences to tender conſciences, granted by King Charles II. as ſuch an acceptance ſeemed an acknowledgment of the king's ſupremacy, and that he had before a right to ſilence them, made a defection from his brethren, and even headed a rebellion, in which he was killed. His followers were never entirely reduced till the Revolution, when they voluntarily ſubmitted to King William.

The Cameronians adhered rigidly to the form of government eſtabliſhed in 1648.

CAMERONIANS, or *Cameronites*, is alſo the denomination of a party of Calviniſts in France, who aſſerted that the will of man is only determined by the practical judgment of the mind; that the cauſe of men's doing good or evil proceeds from the knowledge which God infuſes into them; and that God does not move the will phyſically, but only morally, in virtue of its dependence on the judgment of the mind. They had this name from John Cameron, a famous profeſſor, firſt at Glaſgow, where he was born, in 1580, and afterwards at Bourdeaux, Sedan, and Saumur; at which laſt place he broached his new doctrine of grace and free will, which was formed by Amyraut, Cappel, Bochart, Daille, and others of the more learned among the reformed miniſters, who judged Calvin's doctrines on theſe points too harſh. The Cameronians are a ſort of mitigated Calviniſts, and approach to the opinion of the Arminians. They are alſo called *Univerſaliſts*, as holding the univerſality of Chriſt's death; and ſometimes *Amyraldiſts*. The rigid adherents to the ſynod of Dort accuſed them of Pelagianiſm, and even of Manicheiſm. The controverſy between the parties was carried on with a zeal and ſubtility ſcarce conceivable; yet all the queſtion between them was only, Whether the will of man is determined by the immediate action of God upon it, or by the intervention of a knowledge which God impreſſes into the mind? The ſynod of Dort had defined that God not only illuminates the underſtanding, but gives motion to the will by making an internal change therein. Cameron only admitted the illumination, whereby the mind is morally moved; and explained the ſentiment of the ſynod of Dort ſo as to make the two opinions conſiſtent.

Cames || Camilli.

CAMES, a name given to the ſmall ſlender rods of caſt lead of which the glaziers make their turned lead.

Their lead being caſt into ſlender rods of twelve or fourteen inches long each, is called the *came*; ſometimes alſo they call each of theſe rods a *came*, which being afterwards drawn through their vice, makes their turned lead.

CAMILLUS, MARCUS FURIUS, was the firſt who rendered the family of *Furius* illuſtrious. He triumphed four times, was five times dictator, and was honoured with the title of the *ſecond founder of Rome*. In a word, he acquired all the glory a man can gain in his own country. Lucius Apuleius, one of the tribunes, proſecuted him to make him give an account of the ſpoils taken at Veii. Camillus anticipated judgment, and baniſhed himſelf voluntarily. During his baniſhment, inſtead of rejoicing at the devaſtation of Rome by the Gauls, he exerted all his wiſdom and bravery to drive away the enemy; and yet kept with the utmoſt ſtrictneſs the ſacred law of Rome, in refuſing to accept the command, which ſeveral private perſons offered him. The Romans who were beſieged in the capitol, created him dictator in the year 363; in which office he acted with ſo much bravery and conduct, that he entirely drove the army of the Gauls out of the territories of the commonwealth. He died in the 81ſt year of his age, 365 years before the Chriſtian era.

CAMILLI and CAMILLÆ, in *Antiquity*, boys and girls of ingenuous birth, who miniſtered in the ſacrifices of the gods; and eſpecially thoſe who attended the *flamen dialis*, or prieſt of Jupiter. The word ſeems borrowed

Caminha || Camoens.

borrowed from the language of the ancient Hetrurians, where it ſignified miniſter, and was changed from *caſmillus*. The Tuſcans alſo gave the appellation *Camillus* to Mercury, in quality of miniſter of the gods.

CAMINHA, a maritime town of Portugal, in the province of Entre-Duero-e-Minho, with the title of a duchy. It is ſituated at the mouth of the river Minho, in W. Long. 9. 15. N. Lat. 41. 44.

CAMIS, or KAMIS, in the Japaneſe theology, denote deified ſouls of ancient heroes, who are ſuppoſed ſtill to intereſt themſelves in the welfare of the people whom they anciently commanded.

The camis anſwer to the heroes in the ancient Greek and Roman theology, and are venerated like the ſaints in the modern Roman church.

Beſides the heroes or camis beatified by the conſent of antiquity, the *mikaddos*, or pontiffs, have deified many others, and continue ſtill to grant the apotheoſis to new worthies; ſo that they ſwarm with *camis*: the principal one is *Tenſio Dai Sin*, the common father of Japan, to whom are paid devotions and pilgrimages extraordinary.

CAMISADE, in the art of war, an attack by ſurpriſe in the night, or at the break of day, when the enemy is ſuppoſed to be a-bed. The word is ſaid to have taken its riſe from an attack of this kind; wherein, as a badge or ſignal to know one another by, they bore a ſhift, in French called *chemiſe*, or *camiſe*, over their arms.

CAMISARDS, a name given by the French to the Calviniſts of the Cevennes, who formed a league, and took up arms in their own defence, in 1688.

CAMLETINE, a ſlight ſtuff, made of hair and coarſe ſilk, in the manner of camblet. It is now out of faſhion.

CAMMA, and GOBBI, two provinces of the kingdom of Loango in Africa. The inhabitants are continually at war with each other. The weapons they formerly uſed in their wars were the ſhort pike, bows and arrows, ſword and dagger; but ſince the Europeans have become acquainted with that coaſt, they have ſupplied them with fire-arms. The chief town of Gobbi lies about a day's journey from the ſea.—Their rivers abound with a variety of fiſh; but are infeſted with ſea horſes, which do great miſchief both by land and water. The principal commerce with the natives is in logwood, elephants teeth and tails, the hair of which is highly valued, and uſed for ſeveral curious purpoſes.

CAMMIN, a maritime town of Germany, in Brandenburg Pomerania, ſituated in E. Long. 15°. N. Lat. 54°.

CAMOENS, LOUIS DE, a famous Portugueſe poet, the honour of whoſe birth is claimed by different cities. But according to N. Antonio, and Manuel Correa, his intimate friend, this event happened at Liſbon in 1517. His family was of conſiderable note, and originally Spaniſh. In 1370, Vaſco Perez de Caamans, diſguſted at the court of Caſtile, fled to that of Liſbon, where King Ferdinand immediately admitted him into his council, and gave him the lordſhips of Sardoal, Punnete, Marano, Amendo, and other conſiderable lands; a certain proof of the eminence of his rank and abilities. In the war for the ſucceſſion, which broke out on the death of Ferdinand, Camoens ſided with the king of Caſtile, and was killed in the battle of Aljabarota. But though John I. the victor, ſeized a great part of his eſtate, his widow, the daughter of Gonſalo Tereyro, grand maſter of the order of Chriſt, and general of the Portugueſe army, was not reduced beneath her rank. She had three ſons who took the name of *Camoens*. The family of the eldeſt intermarried with the firſt nobility of Portugal; and even, according to Caſtera, with the blood royal. But the family of the ſecond brother, whoſe fortune was ſlender, had the ſuperior honour to produce the author of the Luſiad. Camoens.

Early in his life the misfortunes of the poet began. In his infancy, Simon Vaz de Camoens, his father, commander of a veſſel, was ſhipwrecked at Goa, where, with his life, the greateſt part of his fortune was loſt. His mother, however, Anne de Macedo of Santarene, provided for the education of her ſon Louis at the univerſity of Coimbra. What he acquired there, his works diſcover; an intimacy with the claſſics, equal to that of a Scaliger, but directed by the taſte of a Milton or a Pope.

When he left the univerſity, he appeared at court. He was handſome; had ſpeaking eyes, it is ſaid; and the fineſt complexion. Certain it is, however, he was a poliſhed ſcholar, which, added to the natural ardour and gay vivacity of his diſpoſition, rendered him an accompliſhed gentleman. Courts are the ſcenes of intrigue; and intrigue was faſhionable at Liſbon. But the particulars of the amours of Camoens reſt unknown. This only appears: he had aſpired above his rank, for he was baniſhed from the court; and in ſeveral of his ſonnets he aſcribes this misfortune to love.

He now retired to his mother's friends at Santarene. Here he renewed his ſtudies, and began his poem on the diſcovery of India. John III. at this time prepared an armament againſt Africa. Camoens, tired of his inactive obſcure life, went to Ceuta in this expedition, and greatly diſtinguiſhed his valour in ſeveral rencounters. In a naval engagement with the Moors in the ſtraits of Gibraltar, in the conflict of boarding, he was among the foremoſt, and loſt his right eye. Yet neither hurry of actual ſervice nor the diſſipation of the camp could ſtifle his genius. He continued his *Luſiadas*, and ſeveral of his moſt beautiful ſonnets were written in Africa, while, as he expreſſed it,

One hand the pen, and one the ſword, employ'd.

The fame of his valour had now reached the court, and he obtained permiſſion to return to Liſbon. But, while he ſolicited an eſtabliſhment which he had merited in the ranks of battle, the malignity of evil tongues, as he calls it in one of his letters, was injuriouſly poured upon him. Though the bloom of his early youth was effaced by ſeveral years reſidence under the ſcorching heavens of Africa, and though altered by the loſs of an eye, his preſence gave uneaſineſs to the gentlemen of ſome families of the firſt rank where he had formerly viſited. Jealouſy is the characteriſtic of the Spaniards and Portugueſe; its reſentment knows no bounds, and Camoens now found it prudent to baniſh himſelf from his native country. Accordingly, in 1553, he ſailed for India, with a reſolution never to return. As the ſhip left the Tagus, he exclaimed, in the words of the ſepulchral monument of Scipio Africanus,

Camoens. canus, *Ingrata patria, non poſſidebis oſſa mea!* "Ungrateful country, thou ſhalt not poſſeſs my bones!" But he knew not what evils in the eaſt would awake the remembrance of his native fields.

When Camoens arrived in India, an expedition was ready to ſail to revenge the king of Cochin on the king of Pimenta. Without any reſt on ſhore after his long voyage, he joined this armament, and in the conqueſt of the Alagada iſlands diſplayed his uſual bravery.

In the year following, he attended Manuel de Vaſconcello in an expedition to the Red ſea. Here, ſays Faria, as Camoens had no uſe for his ſword, he employed his pen. Nor was his activity confined to the fleet or camp. He viſited Mount Felix and the adjacent inhoſpitable regions of Africa, which he ſo ſtrongly pictures in the Luſiad, and in one of his little pieces where he laments the abſence of his miſtreſs.

When he returned to Goa, he enjoyed a tranquillity which enabled him to beſtow his attention on his epic poem. But this ſerenity was interrupted, perhaps by his own imprudence. He wrote ſome ſatires which gave offence: and by order of the viceroy Franciſco Barreto, he was baniſhed to China.

The accompliſhments and manners of Camoens ſoon found him friends, though under the diſgrace of baniſhment. He was appointed commiſſary of the defunct in the iſland of Macao, a Portugueſe ſettlement in the bay of Canton. Here he continued his Luſiad; and here alſo, after five years reſidence, he acquired a fortune, though ſmall, yet equal to his wiſhes. Don Conſtantine de Braganza was now viceroy of India; and Camoens, deſirous to return to Goa, reſigned his charge. In a ſhip, freighted by himſelf, he ſet ſail; but was ſhipwrecked in the gulf near the mouth of the river Mehon on the coaſt of China. All he had acquired was loſt in the waves; his poems, which he held in one hand, while he ſwimmed with the other, were all he found himſelf poſſeſſed of when he ſtood friendleſs on the unknown ſhore. But the natives gave him a moſt humane reception: this he has immortalized in the prophetic ſong in the tenth Luſiad; and in the ſeventh, he tells us, that here he loſt the wealth which ſatisfied his wiſhes.

Agora da eſparança ja adquirida, &c.

Now bleſt with all the wealth fond hope could crave,
Soon I beheld that wealth beneath the wave
For ever loſt;———
My life, like Judah's heaven-doom'd king of yore,
By miracle prolong'd——

On the banks of the Mehon he wrote his beautiful paraphraſe of the pſalm, where the Jews, in the fineſt ſtrain of poetry, are repreſented as hanging their harps on the willows, by the rivers of Babylon, and weeping their exile from their native country. Here Camoens continued ſome time, till an opportunity offered to carry him to Goa. When he arrived at that city, Don Conſtantine de Braganza, the viceroy, whoſe characteriſtic was politeneſs, admitted him into intimate friendſhip, and Camoens was happy till Count Redondo aſſumed the government. Thoſe who had formerly procured the baniſhment of the ſatiriſt, were ſilent while Conſtantine was in power; but now they exerted all their arts againſt him. Redondo, when he entered on office, pretended to be the friend of Camoens; Camoens. yet, with all that unfeeling indifference with which he made his moſt horrible witticiſm on the Zamorin, he ſuffered the innocent man to be thrown into the common priſon. After all the delay of bringing witneſſes, Camoens, in a public trial, fully refuted every accuſation of his conduct while commiſſary at Macao, and his enemies were loaded with ignominy and reproach. But Camoens had ſome creditors, and theſe detained him in priſon a conſiderable time, till the gentlemen of Goa began to be aſhamed that a man of his ſingular merit ſhould experience ſuch treatment among them. He was ſet at liberty; and again he aſſumed the profeſſion of arms, and received the allowance of a gentleman volunteer, a character at this time common in Portugueſe India. Soon after, Pedro Barreto, appointed governor of the fort at Sofala, by high promiſes, allured the poet to attend him thither. The governor of a diſtant fort, in a barbarous country, ſhares in ſome meaſure the fate of an exile. Yet, though the only motive of Barreto was, in this unpleaſant ſituation, to retain the converſation of Camoens at his table, it was his leaſt care to render the life of his gueſt agreeable. Chagrined with his treatment, and a conſiderable time having elapſed in vain dependence upon Barreto, Camoens reſolved to return to his native country. A ſhip, on the homeward voyage, at this time touched at Sofala, and ſeveral gentlemen who were on board were deſirous that Camoens ſhould accompany them. But this the governor ungenerouſly endeavoured to prevent, and charged him with a debt for board. Anthony de Cabra, however, and Hector de Sylveyra, paid the demand; and Camoens, ſays Faria, and the honour of Barreto, were ſold together.

After an abſence of 16 years, Cameons, in 1569, returned to Liſbon, unhappy even in his arrival, for the peſtilence then raged in that city, and prevented his publication for three years. At laſt, in 1572, he printed his Luſiad, which, in the opening of the firſt book, in a moſt elegant turn of compliment, he addreſſed to his prince, King Sebaſtian, then in his 18th year. The king, ſays the French tranſlator, was ſo pleaſed with his merit, that he gave the author a penſion of 4000 reals, on condition that he ſhould reſide at court. But this ſalary, ſays the ſame writer, was withdrawn by Cardinal Henry, who ſucceeded to the crown of Portugal, loſt by Sebaſtian at the battle of Alcazar.

Though the great patron of one ſpecies of literature, a ſpecies the reverſe of that of Camoens, certain it is, that the author of the Luſiad was utterly neglected by Henry, under whoſe inglorious reign he died in all the miſery of poverty. By ſome, it is ſaid, he died in an alms-houſe. It appears, however, that he had not even the certainty of ſubſiſtence which theſe houſes provide. He had a black ſervant, who had grown old with him, and who had long experienced his maſter's humanity This grateful Indian, a native of Java, who, according to ſome writers, ſaved his maſter's life in the unhappy ſhipwreck where he loſt his effects, begged in the ſtreets of Liſbon for the only man in Portugal on whom God had beſtowed theſe talents which have a tendency to erect the ſpirit of a downward age. To the eye of a careful obſerver, the fate of Camoens

throws

Camomile, Camp.

throws great light on that of his country, and will appear ſtrictly connected with it. The ſame ignorance, the ſame degenerated ſpirit, which ſuffered Camoens to depend on his ſhare of the alms begged in the ſtreets by his old hoary ſervant, the ſame ſpirit which cauſed this ſunk the kingdom of Portugal into the moſt abject vaſſalage ever experienced by a conquered nation. While the grandees of Portugal were blind to the ruin which impended over them, Camoens beheld it with a pungency of grief which haſtened his exit. In one of his letters he has theſe remarkable words: *Em fim accaberey à vida, e verram todos que fuy efeicoada a minho patria, &c.* "I am ending the courſe of my life; the world will witneſs how I have loved my country. I have returned, not only to die in her boſom, but to die with her."

In this unhappy ſituation, in 1579, in his 62d year, the year after the fatal defeat of Don Sebaſtian, died Louis de Camoens, the greateſt literary genius ever produced by Portugal; in martial courage and ſpirit of honour, nothing inferior to her greateſt heroes. And in a manner ſuitable to the poverty in which he died, was he buried.

CAMOMILE. See ANTHEMIS, BOTANY *Index*.

CAMP, the ground on which an army pitch their tents. It is marked out by the quartermaſter general, who appoints every regiment their ground.

The chief advantages to be minded in chooſing a camp for an army, are, to have it near the water, in a country of forage, where the ſoldiers may find wood for dreſſing their victuals; that it have a free communication with garriſons, and with a country from whence it may be ſupplied with proviſions; and, if poſſible, that it be ſituated on a riſing ground, in a dry gravelly ſoil. Beſides, the advantages of the ground ought to be conſidered, as marſhes, woods, rivers, and encloſures; and if the camp be near the enemy, with no river or marſh to cover it, the army ought to be intrenched. An army always encamps fronting the enemy; and generally in two lines, running parallel about 500 yards diſtance; the horſe and dragoons, on the wings; and the foot, in the centre: ſometimes a body of two, three, or four brigades, is encamped behind the two lines, and is called the *body of reſerve*. The artillery and bread-waggons are generally encamped in the rear of the two lines. A battalion of foot is allowed 80 or 100 paces for its camp; and 30 or 40 for an interval betwixt one battalion and another. A ſquadron of horſe is allowed 30 for its camp, and 30 for an interval, and more if the ground will allow it.

Where the grounds are equally dry, thoſe camps are always the moſt healthful that are pitched on the banks of large rivers; becauſe, in the hot ſeaſon, ſituations of this kind have a ſtream of freſh air from the water, ſerving to carry off the moiſt and putrid exhalations. On the other hand, next to marſhes, the worſt encampments are on low grounds cloſe beſet with trees; for then the air is not only moiſt and hurtful in itſelf, but by ſtagnating becomes more ſuſceptible of corruption. However, let the ſituation of camps be ever ſo good, they are frequently rendered infectious by the putrid effluvia of rotten ſtraw, and the privies of the army, more eſpecially if the bloody flux prevails; in which caſe the beſt method of preventing a general infection, is to leave the ground with the privies, foul ſtraw, and other filth, of the camp behind. This muſt be frequently done, if conſiſtent with the military operations: but when theſe render it improper to change the ground often, the privies ſhould be made deeper than uſual, and once a-day a thick layer of earth thrown into them till the pits are near full; and then they are to be well covered, and ſupplied by others. It may alſo be a proper caution to order the pits to be made either in the front or the rear, as the then ſtationary winds may beſt carry off their effluvia from the camp. Moreover, it will be neceſſary to change the ſtraw frequently, as being not only apt to rot, but to retain the infectious ſteams of the ſick. But if freſh ſtraw cannot be procured, more care muſt be taken in airing the tents, as well as the old ſtraw. Camp.

The diſpoſition of the Hebrew encampment was at firſt laid out by God himſelf. Their camp was of a quadrangular form, ſurrounded with an encloſure of the height of 10 hands-breadth. It made a ſquare of 12 miles in compaſs about the tabernacle; and within this was another called the *Levites camp*.

The Greeks had alſo their camps fortified with gates and ditches. The Lacedemonians made their camp of a round figure, looking upon that as the moſt perfect and defenſible of any form: we are not, however, to imagine, that they thought this form ſo eſſential to a camp, as never to be diſpenſed with when the circumſtances of the place required it. Of the reſt of the Grecian camps, it may be obſerved, that the moſt valiant of the ſoldiers were placed at the extremities, the reſt in the middle. Thus we learn from Homer, that Achilles and Ajax were poſted at the ends of the camp before Troy, as bulwarks on each ſide of the reſt of the princes.

The figure of the Roman camp was a ſquare divided into two principal parts: in the upper part were the general's pavilion, or prætorium, and the tents of the chief officers; in the lower, thoſe of inferior degree were placed. On one ſide of the prætorium ſtood the quæſtorium, or apartment of the treaſurer of the army: and near this the forum, both for a market place and the aſſembling of councils. On the other ſide of the prætorium were lodged the legati; and below it the tribunes had their quarters, oppoſite to their reſpective legions. Aſide of the tribunes were the præfecti of the foreign troops, over againſt their reſpective wings; and behind theſe were the lodgments of the evocati, then thoſe of the extraordinarii and ablecti equites, which concluded the higher part of the camp. Between the two partitions was a ſpot of ground called *principia*, for the altars and images of the gods, and probably alſo for the chief enſigns. The middle of the lower partition was aſſigned to the Roman horſe; next to them were quartered the triarii; then the principes, and cloſe by them the haſtati; afterwards the foreign horſe, and laſtly, the foreign foot. They fortified their camp with a ditch and parapet, which they termed *foſſa* and *vallum*; in the latter ſome diſtinguiſh two parts, viz. the *agger* or earth, and the *ſudes* or wooden ſtakes driven in to ſecure it. The camps were ſometimes ſurrounded by walls made of hewn ſtone; and the tents themſelves formed of the ſame matter.

In the front of the Turkiſh camp are quartered the janizaries and other foot, whoſe tents encompaſs their aga: in the rear are the quarters of the ſpahis and other

Camp || Campaign.

other horſemen. The body of the camp is poſſeſſed by the ſtately tents or pavilions of the vizier or general, rais effendi or chancellor, khaija or ſteward, the teſterdar baſhaw or lord treaſurer, and kapiſlar kahiaſeer or maſter of the ceremonies. In the middle of theſe tents is a ſpacious field, wherein are erected a building for the divan, and a hafna or treaſury. When the ground is marked out for a camp, all wait for the pitching of the tent *lailac*, the place where the courts of juſtice are held; it being the diſpoſition of this that is to regulate all the reſt.

The Arabs ſtill live in camps, as the ancient Scenites did. The camp of the Aſſyne Emir, or king of the country about Tadmor, is deſcribed by a traveller who viewed it, as ſpread over a very large plain, and poſſeſſing ſo vaſt a ſpace, that though he had the advantage of a riſing ground, he could not ſee the utmoſt extent of it. His own tent was near the middle; ſcarce diſtinguiſhable from the reſt, except that it was bigger, being made, like the others, of a ſort of haircloth.

CAMP, is alſo uſed by the Siameſe, and ſome other nations in the Eaſt Indies, as the name of the quarters which they aſſign to foreigners who come to trade with them. In theſe camps, every nation forms, as it were, a particular town, where they carry on all their trade, not only keeping all their warehouſes and ſhops there, but alſo live in theſe camps with their whole families. The Europeans, however, are ſo far indulged, that at Siam, and almoſt everywhere elſe, they may live either in the cities or ſuburbs, as they ſhall judge moſt convenient.

CAMP-fight, or *KAMP-fight*, in law writers, denotes the trial of a cauſe by duel, or a legal combat of two champions in the field, for deciſion of ſome controverſy.

In the trial by camp fight, the accuſer was, with the peril of his own body, to prove the accuſed guilty; and by offering him his glove, to challenge him to this trial, which the other muſt either accept of, or acknowledge himſelf guilty of the crime whereof he was accuſed.

If it were a crime deſerving death, the camp-fight was for life and death: if the offence deſerved only impriſonment, the camp fight was accompliſhed when one combatant had ſubdued the other, ſo as either to make him yield or take him priſoner. The accuſed had liberty to chooſe another to fight in his ſtead, but the accuſer was obliged to perform it in his own perſon, and with equality of weapons. No women were permitted to be ſpectators, nor men under the age of thirteen. The prieſt and the people who looked on, were engaged ſilently in prayer, that the victory might fall to him who had right. None might cry, ſhriek, or give the leaſt ſign; which in ſome places was executed with ſo much ſtrictneſs, that the executioner ſtood ready with an axe to cut off the right hand or foot of the party that ſhould offend herein.

He that, being wounded, yielded himſelf, was at the other's mercy either to be killed or ſuffered to live. But if life were granted him, he was declared infamous by the judge, and diſabled from ever bearing arms, or riding on horſeback.

CAMPAGNA. See CAMPANIA.

CAMPAIGN, in the art of war, denotes the ſpace of time that an army keeps the field, or is encamped.— The beginning of every campaign is conſiderably more unhealthy than if the men were to remain in quarters. After the firſt fortnight or three weeks encampment, the ſickneſs decreaſes daily; the moſt infirm being by that time in the hoſpitals, and the weather daily growing warmer. This healthy ſtate continues throughout the ſummer, unleſs the men get wet clothes or wet beds; in which caſe, a greater or leſs degree of the dyſentery will appear in proportion to the preceding heats. But the moſt ſickly part of the campaign begins about the middle or end of Auguſt, whilſt the days are ſtill hot, but the nights cool and damp, with fogs and dews: then, and not ſooner, the dyſentery prevails; and though its violence is over by the beginning of October, yet the remitting fever gaining ground, continues throughout the reſt of the campaign, and never entirely ceaſes, even in winter-quarters, till the froſts begin. At the beginning of a campaign the ſickneſs is ſo uniform, that the number may be nearly predicted; but for the reſt of the ſeaſon, as the diſeaſes are then of a contagious nature, and depend ſo much upon the heats of ſummer, it is impoſſible to foreſee how many may fall ſick from the beginning to the end of autumn. It is alſo obſerved, that the laſt fortnight of a campaign, if protracted till the beginning of winter, is attended with more ſickneſs than the firſt two months encampment: ſo that it is better to take the field a fortnight ſooner, in order to return into winter-quarters ſo much the earlier. As to winter expeditions, though ſevere in appearance, they are attended with little ſickneſs, if the men have ſtrong ſhoes, quarters, fuel, and proviſions. Long marches in ſummer are not without danger, unleſs made in the night, or ſo early in the morning as to be over before the heat of the day.

Campaign || Campania.

CAMPANACEÆ, in *Botany*, an order of plants in the *Fragmenta methodi naturalis* of Linnæus, in which are the following genera, viz. convolvulus, ipomæa, polemonium, campanula, roella, viola, &c. *

* See *Botany*, Natural Order.

CAMPANELLA, THOMAS, a famous Italian philoſopher, born at Stilo in Calabria, in 1568. He diſtinguiſhed himſelf by his early proficiency in learning; for at the age of 13 he was a perfect maſter of the ancient orators and poets. His peculiar inclination was to philoſophy, to which he at laſt confined his whole time and ſtudy. In order to arrive at truth, he ſhook off the yoke of authority: by which means the novelty of ſome of his opinions expoſed him to many inconveniences; for at Naples he was thrown into priſon, in which he remained 27 years, and during this confinement wrote his famous work entitled *Atheiſmus triumphatus*. Being at length ſet at liberty, he went to Paris, where he was graciouſly received by Louis XIII. and Cardinal Richelieu; the latter procured him a penſion of 2000 livres, and often conſulted him on the affairs of Italy. Campanella paſſed the remainder of his days in a monaſtery of Dominicans at Paris, and died in 1639.

CAMPANI, MATTHEW, of Spoletto, curate at Rome, wrote a curious treatiſe on the art of cutting glaſſes for ſpectacles, and made ſeveral improvements in optics, aſſiſted by his brother and pupil Joſeph. He died after 1678.

CAMPANIA, a town of Italy, in the kingdom of Naples,

Campania. Naples, and in the farther principato, with a biſhop's ſee. E. Long. 15. 30. N. Lat. 40. 40.

CAMPANIA, or *Campagna di Roma*, anciently Latium, a province of Italy, bounded on the weſt by the Tiber and the ſea, on the ſouth-weſt by the ſea, on the ſouth by Terra di Lavoro, on the eaſt by Abruzzo, and on the north by Sabina. Though the ſoil is good, it produces little or nothing, on account of the heavy duties on corn; and though the waters are good, the air is unwholeſome. It is ſubject to the Pope, and is about 60 miles in length on the Mediterranean ſea.

It has been generally thought that the air of this country hath ſomething in it peculiarly noxious during the ſummer-time; but Mr Condamine is of opinion that it is not more unhealthy than any other marſhy country. His account follows. "It was after the invaſion of the Goths in the fifth and ſixth centuries that this corruption of the air began to manifeſt itſelf. The bed of the Tiber being covered by the accumulated ruins of the edifices of ancient Rome, could not but raiſe itſelf conſiderably. But what permits us not to doubt of this fact is, that the ancient and well-preſerved pavement of the Pantheon and its portico is overflowed every winter; that the water even riſes there ſometimes to the height of eight or ten feet: and that it is not poſſible to ſuppoſe that the ancient Romans ſhould have built a temple in a place ſo low as to be covered with the waters of the Tiber on the leaſt inundation. It is evident, then, that the level of the bed of this river is raiſed ſeveral feet; which could not have happened without forming there a kind of dikes or bars. The choaking up of its canal neceſſarily occaſioned the overflow and reflux of its waters in ſuch places as till then had not been ſubject to inundations: to theſe overflowings of the Tiber were added all the waters that eſcaped out of the ancient aqueducts, the ruins of which are ſtill to be ſeen, and which were entirely broken and deſtroyed by Totila. What need, therefore, of any thing more to infect the air, in a hot climate, than the exhalations of ſuch a maſs of ſtagnating waters deprived of any diſcharge, and become the receptacle of a thouſand impurities, as well as the grave of ſeveral millions both of men and animals? The evil could not but increaſe from the ſame cauſes while Rome was expoſed to the incurſions and devaſtations of the Lombards, the Normans, and the Saracens, which laſted for ſeveral centuries. The air was become ſo infectious there at the beginning of the 13th century, that Pope Innocent III. wrote, that few people at Rome arrived to the age of forty years, and that nothing was more uncommon there than to ſee a perſon of ſixty. A very ſhort time after, the popes transferred the ſeat of their reſidence to Avignon: during the ſeventy-two years they remained there, Rome became a deſert; the monaſteries in it were converted into ſtables; and Gregory XI. on his return to Rome, in 1376, hardly counted there 30,000 inhabitants. At his death began the troubles of the great ſchiſm in the weſt, which continued for upwards of 50 years. Martin V. in whom this ſchiſm ended in the year 1429, and his firſt ſucceſſors, were able to make but feeble efforts againſt ſo inveterate an evil. It was not till the beginning of the 16th century that Leo X. under whom Rome began to reſume her wonted ſplendour, gave himſelf ſome trouble about re-eſtabliſhing the ſalubrity of the air: but the city, being ſhortly after beſieged twice ſucceſſively by the emperor Charles V. ſaw itſelf plunged again into all its old calamities; and from 85,000 inhabitants, which it contained under Leo X. it was reduced under Clement VIII. to 32,000. In ſhort, it is only ſince the time of Pius V. and Sextus V. at the end of the 16th century, that the popes have conſtantly employed the neceſſary methods for purifying the air of Rome and its environs, by procuring proper diſcharges for the waters, drying up the humid and marſhy grounds, and covering the banks of the Tiber and other places reputed uninhabitable with ſuperb edifices. Since that time a perſon may dwell at Rome, and go in or out of it at all ſeaſons of the year. At the beginning, however, of the preſent century, they were ſtill afraid to lie out of the city in ſummer, when they had reſided there; as they were alſo to return to it, when once they had quitted it. They never ventured to ſleep at Rome, even in broad day, in any other houſe than their own. They are greatly relaxed at preſent from theſe ancient ſcruples: I have ſeen cardinals, in the months of July and Auguſt, go from Rome to lie at Fraſcati, Tivoli, Albano, &c. and return the next or the following days to the city, without any detriment to their health: I have myſelf tried all theſe experiments, without ſuffering the leaſt inconvenience from them: we have even ſeen, in the laſt war in Italy, two armies encamped under the walls of Rome at the time when the heats were moſt violent. Yet, notwithſtanding all this, the greater part of the country people dare not ſtill venture to lie during that ſeaſon of the year, nor even as much as ſleep in a carriage, in any part of the territory comprehended under the name of the *Campagna of Rome*."

Campaniform || Campbell.

CAMPANIFORM, or CAMPANULATED, an appellation given to flowers reſembling a bell.

CAMPANINI, a name given to an Italian marble dug out of the mountains of Carrara, becauſe, when it is worked, it ſounds like a bell.

CAMPANULA, or BELL-FLOWER. See BOTANY *Index*.

CAMPBELL, ARCHIBALD, earl and marquis of Argyle, was the ſon of Archibald earl of Argyle, by the lady Anne Douglas, daughter of William earl of Morton. He was born in the year 1598; and educated in the profeſſion of the Proteſtant religion, according to the ſtricteſt rules of the church of Scotland, as it was eſtabliſhed immediately after the reformation. During the commonwealth he was induced to ſubmit to its authority. Upon the reſtoration, he was tried for his compliance; a crime common to him with the whole nation, and ſuch a one as the moſt loyal and affectionate ſubject might frequently by violence be induced to commit. To make this compliance appear the more voluntary and hearty, there were produced in court letters which he had wrote to Albemarle, while that general governed Scotland, and which contained expreſſions of the moſt cordial attachment to the eſtabliſhed government. But, beſides the general indignation excited by Albemarle's diſcovery of this private correſpondence, men thought, that even the higheſt demonſtrations of affection might, during jealous times, be exacted as a neceſſary mark of compliance from a perſon of ſuch diſtinction as Argyle; and could not, by any equitable conſtruction, imply the crime of treaſon.

Campbell. ſon. The parliament, however, ſcrupled not to paſs ſentence upon him, and he ſuffered with great conſtancy and courage.

CAMPBELL, *Archibald*, earl of Argyle, ſon to the former, had from his youth diſtinguiſhed himſelf by his loyalty and his attachment to the royal family. Though his father was head of the covenanters, he himſelf refuſed to concur in any of their meaſures; and when a commiſſion of colonel was given him by the convention of ſtates, he forbore to act upon it till it ſhould be ratified by the king. By his reſpectful behaviour, as well as by his ſervices, he made himſelf acceptable to Charles when that prince was in Scotland, and even after the battle of Worceſter, all the misfortunes which attended the royal cauſe could not engage him to deſert it. Under Middleton he obſtinately perſevered to haraſs and infeſt the victorious Engliſh; and it was not till he received orders from that general, that he would ſubmit to accept of a capitulation. Such jealouſy of his loyal attachments was entertained by the commonwealth and protector, that a pretence was ſoon after fallen upon to commit him to priſon; and his confinement was rigorouſly continued till the reſtoration. The king, ſenſible of his ſervices, had remitted to him his father's forfeiture, and created him earl of Argyle; and when a moſt unjuſt ſentence was paſſed upon him by the Scots parliament, Charles had anew remitted it. In the ſubſequent part of this reign Argyle behaved himſelf dutifully; and though he ſeemed not diſpoſed to go all lengths with the court, he always appeared, even in his oppoſition, a man of mild diſpoſitions and peaceable deportment.

A parliament was ſummoned at Edinburgh in ſummer 1681, and the duke was appointed commiſſioner. Beſides granting money to the king, and voting the indefeaſible right of ſucceſſion, this parliament enacted a teſt, which all perſons poſſeſſed of offices, civil, military, or eccleſiaſtical, were bound to take. In this teſt the king's ſupremacy was aſſerted, the covenant renounced, paſſive obedience aſſented to, and all obligations diſclaimed of endeavouring any alteration in civil or eccleſiaſtical eſtabliſhments. This was the ſtate of the teſt as propoſed by the courtiers; but the country party propoſed alſo a clauſe of adherence to the Proteſtant religion, which could not with decency be rejected. The whole was of an enormous length, conſidered as an oath; and, what was worſe, a confeſſion of faith was there ratified which had been impoſed a little after the reformation, and which contained many articles altogether forged by the parliament and nation. Among others, the doctrine of reſiſtance was inculcated; ſo that the teſt being voted in a hurry, was found on examination to be a medley of abſurdity and contradiction. Though the courtiers could not reject the clauſe of adhering to the Proteſtant religion, they propoſed, as a requiſite mark of reſpect, that all princes of the blood ſhould be exempted from taking that oath. This exception was zealouſly oppoſed by Argyle; who obſerved that the ſole danger to be dreaded for the Proteſtant religion muſt proceed from the perverſion of the royal family. By inſiſting on ſuch topics, he drew on himſelf the ſecret indignation of the duke of York, of which he ſoon felt the fatal conſequences.

When Argyle took the teſt as a privy counſellor, he ſubjoined, in the duke's preſence, an explanation which Campbell. he had beforehand communicated to that prince, and which he believed to have been approved by him. It was in theſe words. "I have conſidered the teſt, and am very deſirous of giving obedience as far as I can. I am confident that the parliament never intended to impoſe contradictory oaths: therefore I think no man can explain it but for himſelf. Accordingly I take it as far as it is conſiſtent with itſelf and the Proteſtant religion. And I do declare that I mean not to bind myſelf, in my ſtation, and in a lawful way, from wiſhing and endeavouring any alteration, which I think to the advantage of church or ſtate, and not repugnant to the Proteſtant religion and my loyalty: and this I underſtand as a part of my oath." The duke, as was natural, heard it with great tranquillity: no one took the leaſt offence: Argyle was admitted to ſit that day in council: and it was impoſſible to imagine that a capital offence had been committed where occaſion ſeemed not to have been given ſo much as for a frown or reprimand.

Argyle was much ſurpriſed a few days after, to find that a warrant was iſſued for committing him to priſon; that he was indicted for high treaſon, leaſing-making, and perjury; and that from the innocent words abovementioned an accuſation was extracted, by which he was to forfeit life, honours, and fortune. It is needleſs to enter into particulars, where the iniquity of the whole is ſo evidently apparent. Though the ſword of juſtice was diſplayed, even her ſemblance was not put on; and the forms of law were preſerved to ſanctify, or rather aggravate, the oppreſſion. Of five judges, three did not ſcruple to find the guilt of treaſon and leaſing-making to be incurred by the priſoner: a jury of 15 noblemen gave verdict againſt him; and the king being conſulted, ordered the ſentence to be pronounced, but the execution of it to be ſuſpended till further orders. Argyle, however, ſaw no reaſon to truſt to the juſtice or mercy of ſuch enemies: He made his eſcape from priſon, and till he could find a ſhip for Holland he concealed himſelf during ſome time in London. The king heard of his lurking place, but would not ſuffer him to be arreſted. All the parts, however, of his ſentence, ſo far as the government in Scotland had power, were rigorouſly executed; his eſtate confiſcated, his arms reverſed and torn. Having got over to Holland, he remained there during the remaining part of the reign of Charles II. But thinking himſelf at liberty, before the coronation of James II. to exert himſelf in order to recover the conſtitution by force of arms, he concerted meaſures with the duke of Monmouth, and went into Scotland, to aſſemble his friends: but not meeting with the ſucceſs he expected, he was taken priſoner; and being carried to Edinburgh, was beheaded upon his former unjuſt ſentence, June 30. 1685. He ſhowed great conſtancy and courage under his misfortunes: on the day of his death he ate his dinner very cheerfully; and, according to cuſtom, ſlept after it a quarter of an hour or more, very ſoundly. At the place of execution, he made a ſhort, grave, and religious ſpeech; and, after ſolemnly declaring that he forgave all his enemies, ſubmitted to death with great firmneſs.

CAMPBELL, *Archibald*, firſt duke of Argyle, ſon to the preceding, was an active promoter of the revo-

Campbell. lution. He came over with the prince of Orange; was admitted into the convention as earl of Argyle, though his father's attainder was not reverſed; and in the claim of rights the ſentence againſt him was declared to be, what moſt certainly it was, a reproach upon the nation. The eſtabliſhment of the crown upon the prince and princeſs of Orange being carried by a great majority in the Scotiſh convention, the earl was ſent from the nobility, with Sir James Montgomery and Sir John Dalrymple from the barons and boroughs, to offer the crown, in the name of the convention, to their majeſties, and tendered them the coronation oath; for which, and many other eminent ſervices, he was admitted a member of the privy council, and, in 1690, made one of the lords of the treaſury. He was afterwards made a colonel of the Scots horſe guards; and, in 1694, one of the extraordinary lords of ſeſſion. He was likewiſe created duke of Argyle, marquis of Kintyre and Lorn, earl of Campbell and Cowall, Viſcount of Lochow and Glenila, Lord Inverary, Mull, Morvern, and Terrey, by letters-patent, bearing date at Kenſington the 23d of June 1701. He ſent over a regiment to Flanders for King William's ſervice, the officers of which were chiefly of his own name and family, who bravely diſtinguiſhed themſelves through the whole courſe of the war. He married Elizabeth, daughter of Sir Lionel Talmaſh of Helmingham in the county of Suffolk, by Elizabeth ducheſs of Lauderdale his wife, daughter and heireſs of William Murray earl of Dyſart, by whom he left iſſue two ſons and a daughter; namely, John duke of Argyle, the ſubject of the next article; Archibald, who ſucceeded his brother as duke of Argyle; and Lady Anne, married to James Stuart, ſecond earl of Bute, by whom ſhe had a ſon afterwards earl of Bute.

Campbell, *John*, ſecond duke of Argyle, and alſo duke of Greenwich and baron of Chatham, ſon to the ſubject of the preceding article, was born on the 10th of October 1680; and, on the very day when his grandfather ſuffered at Edinburgh, fell out of a window three pair of ſtairs high without receiving any hurt. At the age of 15, he had made a conſiderable progreſs in claſſical learning. His father then perceived and encouraged his military diſpoſition, and introduced him to King William, who appointed him to the command of a regiment. In this ſituation he remained till the death of his father in 1703; when becoming duke of Argyle, he was ſoon after ſworn of Queen Anne's privy council, made captain of the Scotch horſe guards, and appointed one of the extraordinary lords of ſeſſion. In 1704, her majeſty reviving the Scotiſh order of the thiſtle, his grace was inſtalled one of the knights of that order, and was ſoon after appointed high-commiſſioner to the Scotch parliament; where, being of great ſervice in promoting the intended union, he was on his return created a peer of England, by the titles of *baron of Chatham* and *earl of Greenwich*, and in 1710 was made knight of the garter. His grace firſt diſtinguiſhed himſelf in his military capacity at the battle of Oudenarde; where he commanded as brigadier-general, with all the bravery of youth and the conduct of a veteran officer. He was preſent under the duke of Marlborough at the ſiege of Ghent, and took poſſeſſion of the town. He had alſo a conſiderable ſhare in the victory obtained over the French at the battle of Malplaquet, by diſlodging them from the wood of Sart, and gaining a poſt of great conſequence. In this ſharp engagement, ſeveral muſket-balls paſſed through the duke's clothes, hat, and peruke. Soon after this hot action, he was ſent to take the command in Spain; and after the reduction of Port Mahon, he returned to England. His grace having now a ſeat in the houſe of lords, he cenſured the meaſures of the miniſtry with ſuch freedom, that all his places were diſpoſed of to other noblemen: but at the acceſſion of George I. he recovered his influence. At the breaking out of the rebellion in 1715, he was made commander in chief of his majeſty's forces in North Britain; and was the principal means and cauſe of the total extinction, at that time, of the rebellion in Scotland, without much bloodſhed. In direct oppoſition to him, or that part of the army he commanded, at the head of all his Campbells was placed Campbell earl of Braidalbin, of the ſame family and kindred, by ſome fatal error that ever miſguided and miſled that unhappy family of the Stuarts and all its adherents. The conſequence was, that both ſets of Campbells, from family affection, refuſed to ſtrike a ſtroke, and retired out of the battle. He arrived at London March 6th 1716, and was in high favour: but, to the ſurpriſe of people of all ranks, he was in a few months diveſted of all his employments; and from this period to the year 1718, he ſignalized himſelf in a civil capacity, by his uncorrupted patriotiſm and manly eloquence. In the beginning of the year 1719, he was again admitted into favour, appointed lord-ſteward of the houſehold, and in April following was created duke of Greenwich. He continued in the adminiſtration during all the remaining part of that reign; and, after his late majeſty's acceſſion, till April 1740; when he delivered a ſpeech with ſuch warmth, that the miniſtry being highly offended, he was again diſmiſſed from his employments. To theſe, however, on the change of the miniſtry, he was ſoon reſtored; but not approving of the meaſures of the new miniſtry more than thoſe of the old, he gave up all his poſts for the laſt time, and never after engaged in affairs of ſtate. He now enjoyed privacy and retirement; and died of a paralytic diſorder on the 4th of October 1743. To the memory of his grace a very noble monument was erected in Weſtminſter-Abbey, executed by the ingenious Roubilliac.

The duke of Argyle, though never firſt miniſter, was a very able ſtateſman and politician, moſt ſteadily fixed in thoſe principles he believed to be right, and not to be ſhaken or changed. His delicacy and honour were ſo great, that it hurt him to be even ſuſpected; witneſs that application ſaid to be made to him by one of the adherents of the Stuart family before the laſt rebellion in order to gain his intereſt, which was conſiderable both in Scotland and England. He immediately ſent the letter to the ſecretary of ſtate; and it vexed him much even to have an application made him, leſt any perſon ſhould think him capable of acting a double part. When he thought meaſures wrong or corrupt, he cared not who was the author, however great or powerful he might be; witneſs his boldly attacking the great duke of Marlborough in the houſe of lords, about his forage and army contracts in Flanders, in the very zenith of his power and popularity,

Campbell. popularity, though in all other reſpects he was the moſt able general of his time. The duke of Argyle on all occaſions ſpoke well, with a firm, manly, and noble eloquence; and ſeems to deſerve the character given of him by Pope:

Argyle the ſtate's whole thunder born to wield,
And ſhake alike the ſenate and the field.

In private life, the duke's conduct was highly exemplary. He was an affectionate huſband and an indulgent maſter. He ſeldom parted with his ſervants till age had rendered them incapable of their employments; and then he made proviſion for their ſubſiſtence. He was liberal to the poor, and particularly to perſons of merit in diſtreſs: but though he was ready to patronize deſerving perſons, he was extremely cautious not to deceive any by laviſh promiſes or leading them to form vain expectations. He was a ſtrict economiſt, and paid his tradeſmen punctually every month; and though he maintained the dignity of his rank, he took care that no part of his income ſhould be waſted in empty pomp or unneceſſary expences. He was twice married; and left five daughters, but no male iſſue. The titles of duke and earl of Greenwich and baron of Chatham became extinct at his death; but in his other titles he was ſucceeded by his brother Archibald earl of Ila, the ſubject of the next article.

Campbell, *Archibald*, third duke of Argyle, brother to the ſubject of the preceding article, was born at Hamhouſe, in England, in June 1682, and was educated at the univerſity of Glaſgow. He afterwards applied himſelf to the ſtudy of the law at Utrecht; but, upon his father's being created a duke, he betook himſelf to a military life, and ſerved ſome time under the duke of Marlborough. Upon quitting the army, in which he did not long remain, he applied to the acquiſition of that knowledge which would enable him to make a figure in the political world. In 1705, he was conſtituted treaſurer of Scotland, and made a conſiderable figure in parliament, though he was not more than 23 years of age. In 1706, he was appointed one of the commiſſioners for treating of the Union; and the ſame year was created Lord Oronſay, Dunoon, and Arrois, Viſcount and Earl of Iſlay. In 1708, he was made an extraordinary lord of ſeſſion; and when the Union was effected, he was choſen one of the Sixteen Peers for Scotland, in the firſt parliament of Great-Britain; and was conſtantly elected to every future parliament till his death, except the fourth. In 1710, he was made juſtice-general of Scotland. In 1711, he was called to the privy council; and upon the acceſſion of George I. he was nominated lord regiſter of Scotland. When the rebellion broke out in 1715, he again betook himſelf to arms, in defence of the houſe of Hanover, and by his prudent conduct in the Weſt Highlands, he prevented General Gordon at the head of three thouſand men, from penetrating into the country and raiſing levies. He afterwards joined his brother at Stirling, and was wounded at the battle of Dumblain. In 1725, he was appointed keeper of the privy ſeal; and from this time, he was entruſted with the management of Scotiſh affairs. In 1734, upon his reſigning the privy ſeal, he was made keeper of the great ſeal, which office he enjoyed till his death. Upon the deceaſe of his brother, he became Campbell. duke of Argyle, hereditary juſtice-general, lieutenant, ſheriff, and commiſſary of Argyleſhire and the Weſtern Iſles, hereditary great maſter of the houſehold, hereditary keeper of Dunſtaffnage, Carrick, and ſeveral other caſtles. He was alſo chancellor of the univerſity of Aberdeen; and laboured to promote the intereſt of that, as well as of the other univerſities of Scotland. He particularly encouraged the ſchool of phyſic at Edinburgh, which has now acquired ſo high a reputation. Having the chief management of Scotch affairs, he was alſo extremely attentive to promote the trade, manufactures, and improvements of his country. It was by his advice that, after the rebellion in 1745, the Highlanders were employed in the royal army. He was a man of great endowments both natural and acquired, well verſed in the laws of his country, and poſſeſſed conſiderable parliamentary abilities. He was likewiſe eminent for his ſkill in human nature, had great talents for converſation, and had collected one of the moſt valuable private libraries in Great Britain. He built himſelf a very magnificent ſeat at Inverary. The faculties of his mind continued ſound and vigorous till his death, which happened ſuddenly on the 15th of April 1761, in the 79th year of his age. He was married, but had no iſſue; and was ſucceeded in his titles and the eſtates of the family by John Campbell, fourth duke of Argyle, ſon of the honourable John Campbell of Mammore, who was the ſecond ſon of Archibald the ninth earl of Argyle.

The family of Argyle was heritable juſtice generals for Scotland till aboliſhed by the juriſdiction act. They are ſtill heritable maſters of the king's houſehold in Scotland, and keepers of Dunſtaffnage and Carrick.

Campbell, *John*, an eminent hiſtorical, biographical, and political writer, was born at Edinburgh, March 8. 1707-8. His father, Robert Campbell of Glenlyon, Eſq; was captain of horſe in a regiment commanded by the then earl of Hyndford; and his mother, Elizabeth, daughter of——Smith, Eſq; of Windſor in Berkſhire, had the honour of claiming a deſcent from the poet Waller. Our author, their fourth ſon, was at the age of five years carried from Scotland to Windſor, where he received the firſt principles of his education; and at a proper age, he was placed out as clerk to an attorney, being intended for the law. This profeſſion, however, he never followed; but by a cloſe application to the acquiſition of knowledge of various kinds, became qualified to appear with great advantage in the literary world. In 1736, before he had completed his 30th year, he gave to the public, in two volumes folio, "The Military Hiſtory of Prince Eugene and the duke of Marlborough," enriched with maps, plans, and cuts. The reputation hence acquired, occaſioned him ſoon after to be ſolicited to take a part in the "Ancient Univerſal Hiſtory." Whilſt employed in this capital work. Mr Campbell found leiſure to entertain the world with other productions. In 1739, he publiſhed the "Travels and Adventures of Edward Brown, Eſq;" 8vo. In the ſame year appeared his "Memoirs of the Baſhaw Duke de Ripperda," 8vo, reprinted, with improvements, in 1740. Theſe memoirs were followed,

Campbell. followed, in 1741, by the "Conciſe Hiſtory of Spaniſh America," 8vo. In 1742, he was the author of "A Letter to a Friend in the Country, on the Publication of Thurloe's State Papers; giving an account of their diſcovery, importance, and utility. The ſame year was diſtinguiſhed by the appearance of the 1ſt and 2d volumes of his "Lives of the Engliſh Admirals, and other eminent Britiſh Seamen." The two remaining volumes were completed in 1744; and the whole, not long after, was tranſlated into German. This was the firſt of Mr Campbell's works to which he prefixed his name; and it is a performance of great and acknowledged merit. In 1743, he publiſhed "Hermippus revived;" a ſecond edition of which, much improved and enlarged, came out in 1749, under the following title: "Hermippus Redivivus: or, the Sage's Triumph over Old Age and the Grave. Wherein a method is laid down for prolonging the life and vigour of man. Including a Commentary upon an ancient Inſcription, in which this great ſecret is revealed; ſupported by numerous authorities. The whole interſperſed with a great variety of remarkable and well-atteſted relations." This extraordinary tract had its origin in a foreign publication; but it was wrought up to perfection by the additional ingenuity and learning of Mr Campbell. In 1744 he gave to the public, in two volumes folio, his "Voyages and Travels," on Dr Harris's plan, being a very diſtinguiſhed improvement of that collection which had appeared in 1705. The time and care employed by Mr Campbell in this important undertaking did not prevent his engaging in another great work, the "Biographia Britannica," which began to be publiſhed in weekly numbers in 1745, and extended to ſeven volumes folio: but our author's articles were only in the firſt four volumes; of which Dr Kippis obſerves, they conſtitute the prime merit.

When the late Mr Dodſley formed the deſign of "The Preceptor," which appeared in 1748, Mr Campbell was to aſſiſt in the undertaking; and the parts written by him were the Introduction to Chronology, and the Diſcourſe on Trade and Commerce, both of which diſplayed an extenſive fund of knowledge upon theſe ſubjects. In 1750 he publiſhed the firſt ſeparate edition of his "Preſent State of Europe;" a work which had been originally begun in 1746, in the "Muſeum," a very valuable periodical performance, printed for Dodſley. There is no production of our author's that hath met with a better reception. It has gone through ſix editions, and fully deſerved this encouragement. The next great undertaking which called for the exertion of our author's abilities and learning, was "The Modern Univerſal Hiſtory." This extenſive work was publiſhed, from time to time, in detached parts, till it amounted to 16 volumes folio; and a ſecond edition of it, in 8vo, began to make its appearance in 1759. The parts of it written by Mr Campbell were, the hiſtories of the Portugueſe, Dutch, Spaniſh, French, Swediſh, Daniſh, and Oſtend Settlements in the Eaſt-Indies; and the Hiſtories of the Kingdoms of Spain, Portugal, Algarve, Navarre, and that of France, from Clovis to 1656. As our author had thus diſtinguiſhed himſelf in the literary world, the degree of LL. D. was very properly and honourably conferred upon him, June 18. 1754, by the univerſity of Glaſgow. Campbell.

His principal and favourite work was, "A political Survey of Great Britain," 2 vol. 4to, publiſhed a ſhort time before his death; in which the extent of his knowledge, and his patriotic ſpirit, are equally conſpicuous. Dr Campbell's reputation was not confined to his own country, but extended to the remoteſt parts of Europe. As a ſtriking inſtance of this, it may be mentioned, that in the ſpring of 1774, the empreſs of Ruſſia was pleaſed to honour him with the preſent of her picture, drawn in the robes worn in that country in the days of John Baſiliowitz, grand duke of Muſcovy, who was contemporary with Queen Elizabeth. To manifeſt the doctor's ſenſe of her imperial majeſty's goodneſs, a ſett of the "Political Survey of Britain," bound in Morocco, highly ornamented, and accompanied with a letter deſcriptive of the triumphs and felicities of her reign, was forwarded to St Peterſburg, and conveyed into her hands by Prince Orloff, who had reſided ſome months in this kingdom.

Dr Campbell in 1736 married Elizabeth, daughter of Benjamin Vobe, of Leominſter, in the county of Hereford, gentleman, with whom he lived nearly 40 years in the greateſt conjugal harmony and happineſs. So wholly did he dedicate his time to books, that he ſeldom went abroad: but to relieve himſelf as much as poſſible from the inconveniences incident to a ſedentary life, it was his cuſtom, when the weather would admit, to walk in his garden; or otherwiſe in ſome room of his houſe, by way of exerciſe. By this method, united with the ſtricteſt temperance in eating, and an equal abſtemiouſneſs in drinking, he enjoyed a good ſtate of health, though his conſtitution was delicate. His domeſtic manner of living did not preclude him from a very extenſive and honourable acquaintance. His houſe, eſpecially on a Sunday evening, was the reſort of the moſt diſtinguiſhed perſons of all ranks, and particularly of ſuch as had rendered themſelves eminent by their knowledge or love of literature. He received foreigners, who were fond of learning, with an affability and kindneſs which excited in them the higheſt reſpect and veneration; and his inſtructive and cheerful converſation made him the delight of his friends in general. He was, during the latter part of his life, agent for the province of Georgia in North America; and died at the cloſe of the year 1775, in the 67th year of his age. The doctor's literary knowledge was by no means confined to the ſubjects on which he more particularly treated as an author; he was well acquainted with the mathematics, and had read much in medicine. It hath been with great reaſon believed, that if he had dedicated his ſtudies to this laſt ſcience, he would have made a very conſpicuous figure in the medical profeſſion. He was eminently verſed in the different parts of ſacred literature; and his acquaintance with the languages extended not only to the Hebrew, Greek and Latin among the ancient, and to the French, Italian, Spaniſh, Portugueſe, and Dutch, among the modern; but likewiſe to the Oriental tongues. He was particularly fond of the Greek language. His attainment of ſuch a variety of knowledge was exceedingly aſſiſted by a memory ſurpriſingly retentive, and which indeed aſtoniſhed

Campbell. niſhed every perſon with whom he was converſant. In communicating his ideas, he had an uncommon readineſs and facility; and the ſtyle of his works, which had been formed upon the model of that of the celebrated Biſhop Sprat, was perſpicuous, eaſy, flowing, and harmonious. To all theſe accompliſhments of the underſtanding, Dr Campbell joined the more important virtues of a moral and pious character. His diſpoſition was gentle and humane, and his manners kind and obliging. He was the tendereſt of huſbands, a moſt indulgent parent, a kind maſter, a firm and ſincere friend. To his great Creator he paid the conſtant and ardent tribute of devotion, duty, and reverence; and in his correſpondences he ſhowed that a ſenſe of piety was always neareſt his heart.

Campbell, *George*, D. D. was born at Aberdeen in December 1719. He was educated at the grammar ſchool in the ſame town, and intended for the employment of ſignet-writer, an occupation ſimilar to that of an Engliſh attorney, in which he was bound an apprentice. The love of ſtudy, however, prevailed over every oppoſition: in 1741 he attended divinity lectures at Edinburgh before the term of his apprenticeſhip was fully completed, and ſoon after became a regular ſtudent in the univerſity of Aberdeen, attending the lectures of Profeſſor Lumſden in King's, and Profeſſor Chalmers in Mariſchal, college. In 1746 he was licenſed to preach by the preſbytery of Aberdeen. In 1748 he obtained the living of Banchory Terman, in which ſituation he became a married man, and was fortunate in poſſeſſing a lady "remarkable for the ſagacity of her underſtanding, the integrity of her heart, the general propriety of her conduct, and her ſkill in the management of domeſtic œconomy." Mutual happineſs was the conſequence of this union, which was not terminated till her death in 1792. In 1757 he was tranſlated to Aberdeen, to be one of the miniſters of that town, and in 1759 was preſented to the office of principal of Mariſchal college.

Mr Hume's Treatiſe on Miracles gave the new principal an opportunity of evincing that he was not unworthy of his office. He oppoſed it in a ſermon preached before the provincial ſynod of Aberdeen, in 1760, which he was requeſted to publiſh; but he preferred the form of a diſſertation, and in that ſtate ſent the manuſcript to Dr Blair, to be by him communicated to the metaphyſician. Availing himſelf then of the remarks of his friends, and his opponent, he gave it to the world in 1763, with a dedication to Lord Bute: but however deſirable the patronage of the miniſter might be in other reſpects, it was of very little aſſiſtance in giving circulation, in the literary world, to an eſſay which, from the favourable impreſſions of Blair and Hume, was eagerly read, and univerſally admired.

In 1771 he was elected profeſſor of divinity in Mariſchal college, on which he reſigned his office as one of the miniſters of Aberdeen: but as "miniſter of Gray Friars, an office conjoined to the profeſſorſhip about a century ago, he was obliged to preach once every Sunday in one of the eſtabliſhed churches." Few perſons ſeem to have entertained truer notions of the office of a teacher in an univerſity than our new profeſſor; and the plan he had in view, on entering upon his lectures, though expreſſed in rather too ſtrong language, may be recommended to every one who undertakes a ſimilar employment. Campbell.

"Gentlemen, (he thus addreſſes his pupils) the nature of my office has been much miſunderſtood. It is ſuppoſed, that I am to teach you every thing connected with the ſtudy of divinity. I tell you honeſtly, that I am to teach you nothing. Ye are not ſchool-boys. Ye are young men, who have finiſhed your courſes of philoſophy, and ye are no longer to be treated as if ye were at ſchool. Therefore, I repeat it, I am to teach you nothing; but, by the grace of God, I will aſſiſt you to teach yourſelves every thing." In 1771 he publiſhed his excellent ſermon on the Spirit of the Goſpel; and, in 1776, his Philoſophy of Rhetoric. In this latter year, alſo, he acquired the friendſhip of Dr Tucker by a ſermon, then much admired, and very generally read, on the Duty of Allegiance, in which he endeavours to ſhow "that the Britiſh colonies in America had no right, either from reaſon or from ſcripture, to throw off their allegiance;" and he uſes thoſe vulgar arguments, which, as being purely political, and more eſpecially adapted to the ſentiments of the majority of that day, were very improper topics for the pulpit. It is ſo much the faſhion for divines to make the varying politics of the hour the ſubject of their diſcourſes, and in them to follow the ſentiments of thoſe whoſe patronage is deemed moſt advantageous, that we muſt not be very ſevere in our animadverſions on the preſent occaſion. In 1777 he choſe a better ſubject for a diſcourſe, which he publiſhed at the requeſt of the Society for propagating Chriſtian Knowledge, and in which the ſucceſs of the firſt publiſhers of the Goſpel is ably treated as a proof of its truth. In 1779, when many of his countrymen, led away by the madneſs of enthuſiaſm and fanaticiſm, were ruſhing headlong into the moſt antichriſtian practice of perſecution, he publiſhed a very ſeaſonable addreſs to the people of Scotland, on the alarms which had been raiſed by the bill in favour of the Roman Catholics.

In the ſame year, alſo, he publiſhed a ſermon on the Happy Influence of Religion on Civil Society. The laſt work which he lived to bring before the public was his Tranſlation of the Four Goſpels, with preliminary diſſertations, and explanatory notes, of which it is unneceſſary to ſay any thing farther in this place than that it is worthy of his talents and character.

In 1795 he reſigned his profeſſorſhip, in a letter to the moderator of the preſbytery of Aberdeen, which they voted to be inſerted in their records. Soon after the reſignation of his profeſſorſhip, he reſigned alſo the principalſhip, on a penſion of 300l. a-year being conferred on him by government; but this penſion he poſſeſſed for a very ſhort time, for, on the 31ſt of March, 1796, his laſt illneſs ſeized him, and on the next morning it was followed by a paroxyſm of the palſy, which deſtroyed his faculty of ſpeech, and under which he languiſhed till he died. His funeral ſermon was preached on the 17th of April by Dr Brown, who had ſucceeded him in the offices of principal and profeſſor.

His character, very juſtly drawn by the ſame gentleman, we ſhall now lay before our readers. "Dr Campbell, as a public teacher, was long admired for the clearneſs and copiouſneſs with which he illuſtrated

Campbell. ed the great doctrines and precepts of religion, and the ſtrength and energy with which he enforced them. Intimately perſuaded of the truth and infinite conſequence of what revelation teaches, he was ſtrongly deſirous of carrying the ſame conviction to the minds of his hearers, and delivered his diſcourſes with that zeal which flows from ſtrong impreſſions, and that power of perſuaſion which is the reſult of ſincerity of heart, combined with clearneſs of underſtanding. He was ſatisfied, that the more the pure dictates of the goſpel were ſtudied, the more they would approve themſelves to the mind, and bring forth, in the affections and conduct, all the peaceable fruits of righteouſneſs. The unadulterated dictates of Chriſtianity, he was, therefore, only ſtudious to recommend and inculcate; and knew perfectly to diſcriminate them from the inventions and traditions of men. His chief ſtudy ever was, to direct belief to the great objects of practice; and, without theſe, he viewed the moſt orthodox profeſſion as "a ſounding braſs, and a tinkling cymbal." But, beſides the character of a preacher of righteouſneſs, he had alſo that of a teacher of the ſcience of divinity to ſuſtain. How admirably he diſcharged this duty, and with what effect he conveyed the ſoundeſt and moſt profitable inſtruction to the minds of his ſcholars, let thoſe declare who are now in various congregations of this country, communicating to their fellow Chriſtians the fruits of their ſtudies under ſo able and judicious a teacher. Diſcarding all attachment to human ſyſtems, merely conſidered as ſuch, he tied his faith to the Word of God alone, poſſeſſed the happieſt talent in inveſtigating its meaning, and communicated to his hearers the reſult of his own inquiries, with a preciſion and perſpicuity which brought light out of obſcurity, and rendered clear and ſimple what appeared intricate and perplexed. He expoſed, without reſerve, the corruptions which ignorance, craft, and hypocriſy, had introduced into religion, and applied his talent for ridicule to the beſt of all purpoſes, to hold up to contempt the abſurdities with which the pureſt and ſublimeſt truths had been loaded.

"Placed at the head of a public ſeminary of learning, he felt all the importance of ſuch a ſituation, and uniformly directed his influence to public utility. His enlarged and enlightened mind juſtly appreciated the extenſive conſequence of the education of youth. He anticipated all the effects reſulting to the great community of mankind, from numbers of young men iſſuing, in regular ſucceſſion, from the univerſity over which he preſided, and occupying the different departments of ſocial life.

"His benevolent heart delighted to repreſent to itſelf the ſtudents under his direction uſefully and honourably diſcharging the reſpective duties of their different profeſſions; and ſome of them, perhaps, filling the moſt diſtinguiſhed ſtations of civil ſociety. With theſe proſpects before him, he conſtantly directed his public conduct to their attainment. He never ſuffered his judgment to be warped by prejudice or partiality, or his heart to be ſeduced by paſſion or private intereſt. Thoſe mean and ignoble motives by which many are actuated in the diſcharge of important truſts, approached not his mind. A certain honourable pride, if pride it may be called, diffuſed an uniform dignity over the whole of his behaviour. He felt the man degraded by the perverſion of public character. His underſtanding alſo clearly ſhewed him even perſonal advantage attached to ſuch principles and practice, as he adopted from a ſenſe of obligation, and thoſe elevated conceptions of real worth which were ſo congenial to his ſoul. He ſaw, he experienced, eſteem, reſpect, and influence, following in the train of integrity and beneficence; but contempt, diſgrace, averſion, and complete inſignificance, cloſely linked to corruption and ſelfiſhneſs. Little minds are ſeduced and overpowered by ſelfiſh conſiderations, becauſe they have not the capacity to look beyond the preſent advantage, and to extend to the miſery that ſtands on the other ſide of it. The ſame circumſtance that betrays the perverſity of their hearts, alſo evinces the weakneſs of their judgments. Campbell.

"His reputation as a writer is as extenſive as the preſent intercourſe of letters; not confined to his own country, but ſpread through every civilized nation. In his literary purſuits, he aimed not, as is very often the caſe, with men of diſtinguiſhed literary abilities, merely at eſtabliſhing his own celebrity, or increaſing his fortune; but had chiefly at heart the defence of the great cauſe of Religion, or the elucidation of her dictates.

"At an early period he entered the liſts as a champion for Chriſtianity againſt one of its acuteſt opponents. He not only triumphantly refuted his arguments, but even conciliated his reſpect by the handſome and dexterous manner in which his defence was conducted. While he refuted the infidel, he ſpared the man, and exhibited the uncommon ſpectacle of a polemical writer poſſeſſing all the moderation of a Chriſtian. But while he defended Chriſtianity againſt its enemies, he was deſirous of contributing his endeavours to increaſe, among its profeſſors, the knowledge of the ſacred writings. Accordingly, in the latter part of his life, he favoured the world with a work, the fruit of copious erudition, of unwearied application for almoſt thirty years, and of a clear and comprehenſive judgment. We have only to regret, that the other writings of the New Teſtament have not been elucidated by the ſame pen that tranſlated the Goſpels. Nor were his literary merits confined to theology, and the ſtudies more immediately connected with it. Philoſophy, and the fine arts, are alſo indebted to his genius and labours; and in him the polite ſcholar was eminently joined to the deep and liberal divine.

"Political principles will always be much affected by general character. This was alſo the caſe with Dr Campbell. In politics, he maintained that moderation which is the ſureſt criterion of truth and rectitude, and was equally diſtant from thoſe extremes into which men are ſo apt to run in great political queſtions. He cheriſhed that patriotiſm which conſiſts in wiſhing, and endeavouring to promote, the greateſt happineſs of his country, and is always ſubordinate to univerſal benevolence. Firmly attached to the Britiſh conſtitution, he was animated with that genuine love of liberty which it inſpires and invigorates. He was equally averſe to deſpotiſm and to popular anarchy; the two evils into which political parties are ſo frequently hurried, to the deſtruction of all that is valuable to government. Party-ſpirit, of whatever deſcription, he conſidered as having an unhappy tendency to pervert, to the moſt pernicious purpoſes, the beſt principles of the human mind, Campbell.

Campbeltown || Camphora.

and to clothe the moſt iniquitous actions with the moſt ſpecious appearances. Although tenacious of thoſe ſentiments, whether in religion or politics, which he was convinced to be rational and juſt, he never ſuffered mere difference of opinion to impair his good will, to obſtruct his good offices, or to cloud the cheerfulneſs of converſation. His own converſation was enlivened by a vein of the moſt agreeable pleaſantry."

CAMPBELTOWN, a parliament town of Argyleſhire in Scotland, ſeated on the eaſtern ſhore of the peninſula of Kintyre or Cantyre, of which it is the capital. It hath a good harbour; and is now a very conſiderable place, though within theſe 50 years only a petty fiſhing town. It has in fact been created by the fiſhery: for it was appointed the place of rendezvous for the buſſes; and above 260 have been ſeen in the harbour at once. The inhabitants are reckoned to be upwards of 8000 in number. W. Long. 5. 10. N. Lat. 54.

CAMPDEN, a ſmall town of Glouceſterſhire in England, containing about 200 houſes. It gives title of Viſcount, by courteſy, to the earl of Gainſborough his ſon. W. Long. 1. 50. N. Lat. 52.

CAMPEACHY, a town of Mexico in South America, ſeated on the eaſt coaſt of a bay of the ſame name, on the weſt of the province of Yucataro. It is defended by a good wall and ſtrong forts; but is neither ſo rich, nor carries on ſuch a trade, as formerly; it having been the port for the ſale of logwood, the place where it is cut being about 30 miles diſtant. It was taken by the Engliſh in 1596; by the bucaneers in 1678; and by the Flibuſters of St Domingo in 1685, who ſet it on fire and blew up the citadel. W. Long. 93. 7. N. Lat. 19. 20.

Campeachy-Wood. See HÆMATOXYLUM, BOTANY *Index.*

CAMPEN, a ſtrong town of Overyſſel in the United Provinces. It hath a citadel and a harbour; but the latter is almoſt choked up with ſand. It was taken by the Dutch in 1578, and by the French in 1672; but they abandoned it the following year. It is ſeated near the mouth of the river Yſſel and Zuider Zee. E. Long. 5. 35. N. Lat. 52. 38.

CAMPESTRE, in antiquity, a ſort of cover for the privities, worn by the Roman ſoldiers in their field exerciſes; being girt under the navel, and hanging down to the knees. The name is ſuppoſed to be formed from *campus*, the field or place where the Roman ſoldiers performed their exerciſes.

CAMPHORA, or CAMPHIRE, a ſolid concrete ſubſtance extracted from the wood of the laurus camphora. See CHEMISTRY, and MATERIA MEDICA *Index.*

Pure camphire is very white, pellucid, ſomewhat unctuous to the touch; of a bitteriſh aromatic taſte, yet accompanied with a ſenſe of coolneſs; of a very fragrant ſmell, ſomewhat like that of roſemary, but much ſtronger. It has been very long eſteemed one of the moſt efficacious diaphoretics; and has been celebrated in fevers, malignant and epidemical diſtempers. In deliria, alſo, where opiates could not procure ſleep, but rather aggravated the ſymptoms, this medicine has often been obſerved to procure it. All theſe effects, however, Dr Cullen attributes to its ſedative property, and denies that camphire has any other medicinal virtues than thoſe of an antiſpaſmodic and ſedative. He allows it to be very powerful, and capable of doing much good or much harm. From experiments made on different brute creatures, camphire appears to be poiſonous to every one of them. In ſome it produced ſleep followed by death, without any other ſymptom. In others, before death, they were awakened into convulſions and rage. It ſeems, too, to act chiefly on the ſtomach; for an entire piece ſwallowed, produced the above-mentioned effects with very little diminution of weight.

Camphuyſen. || Campian.

CAMPHUYSEN, DIRK THEODORE RAPHAEL, an eminent painter, was born at Gorcum in 1586. He learned the art of painting from Diederic Govertze; and by a ſtudious application to it, he very ſoon not only equalled, but far ſurpaſſed his maſter. He had an uncommon genius, and ſtudied nature with care, judgment, and aſſiduity. His ſubjects were landſcapes, moſtly ſmall, with ruinous buildings, huts of peaſants or views of villages on the banks of rivers, with boats and hoys, and generally he repreſented them by moonlight. His pencil is remarkably tender and ſoft, his colouring true nature and very tranſparent, and his expertneſs in perſpective is ſeen in the proportional diſtances of his objects, which are excellently contrived, and have a ſurpriſing degree of nature and truth. As he left off painting at an age when others are ſcarcely qualified to commence artiſts, few of his works are to be met with, and they bring conſiderable prices; as they cannot but give pleaſure to the eye of every obſerver. He painted his pictures with a thin body of colour, but they are handled with ſingular neatneſs and ſpirit. He practiſed in his profeſſion only till he was 18 years of age, and being then recommended as a tutor to the ſons of the lord of Nieuport, he undertook the employment, and diſcharged it with ſo much credit, that he was appointed ſecretary to that nobleman. He excelled in drawing with a pen; and the deſigns which he finiſhed in that manner are exceedingly valued.

CAMPIAN, EDMUND, an Engliſh Jeſuit, was born at London, of indigent parents, in the year 1540; and educated at Chriſt's hoſpital, where he had the honour to ſpeak an oration before Queen Mary on her acceſſion to the throne. He was admitted a ſcholar of St John's college in Oxford at its foundation, and took the degree of maſter of arts in 1564. About the ſame time he was ordained by a biſhop of the church of England, and became an eloquent Proteſtant preacher. In 1566, when Queen Elizabeth was entertained by the univerſity of Oxford, he ſpoke an elegant oration before her majeſty, and was alſo reſpondent in the philoſophy act in St Mary's church. In 1568, he was junior proctor of the univerſity. In the following year, he went over to Ireland, where he wrote a hiſtory of that kingdom, and turned papiſt; but being found rather too aſſiduous in perſuading others to follow his example, he was committed to priſon. He ſoon, however, found means to make his eſcape. He landed in England in 1571; and thence proceeded to Douay in Flanders, where he publicly recanted his former hereſy, and was created bachelor of divinity. He went ſoon after to Rome, where, in 1573, he was admitted of the ſociety of Jeſus, and was ſent by the general of that order to Vienna, where he wrote his tragedy called

Campian || Campidoctores.

led *Nectar et ambrofia*, which was acted before the emperor with great applauſe.

From Vienna he went to Prague in Bohemia, where he reſided in the Jeſuits college about ſix years, and then returned to Rome. From thence, in 1580, he was ſent by Pope Gregory XIII. with the celebrated Father Parſons, to convert the people of England. From Pitts we learn, that, ſome time before, ſeveral Engliſh prieſts, inſpired by the Holy Ghoſt, had undertaken to convert their countrymen; that 80 of theſe foreign ſeminaries, beſides ſeveral others who by God's grace had been converted in England, were actually engaged in the pious work with great ſucceſs; that ſome of them had ſuffered impriſonment, chains, tortures, and ignominious death, with becoming conſtancy and reſolution: but ſeeing at laſt that the labour was abundant and the labourers few, they ſolicited the aſſiſtance of the Jeſuits; requeſting, that though not early in the morning, they would at leaſt in the third, ſixth, or ninth hour, ſend labourers into the Lord's vineyard. In conſequence of this ſolicitation, the above two were ſent to England. They arrived in an evil hour for Campian, at Dover; and were next day joyfully received by their friends at London. He had not been long in England, before Walſingham the ſecretary of ſtate, being informed of his uncommon aſſiduity in the cauſe of the church of Rome, uſed every means in his power to have him apprehended, but for a long time without ſucceſs. However, he was at laſt taken by one Elliot, a noted *prieſt-taker*, who found him in the houſe of Edward Yates, Eſq; at Lyford in Berkſhire, and conducted him in triumph to London, with a paper on his hat, on which was written *Campian the Jeſuit*. He was impriſoned in the Tower; where, Wood ſays, "he did undergo many examinations, abuſes, wrackings, tortures;" *exquiſitiſſimis cruciatibus tortus*, ſays Pitts. It is hoped, for the credit of our reformers, this torturing part of the ſtory is not true. The poor wretch, however, was condemned, on the ſtatute 25 Ed. III. for high treaſon; and butchered at Tyburn, with two or three of his fraternity. Howſoever criminal in the eye of the law, or of the Engliſh goſpel, might be the zeal of this Jeſuit for the ſalvation of the poor heretics of this kingdom, biographers of each perſuaſion unite in giving him a great and amiable character. "All writers (ſays the Oxford antiquary), whether Proteſtants or Popiſh, ſay, that he was a man of admirable parts; an elegant orator, a ſubtile philoſopher and diſputant, and an exact preacher whether in Engliſh or the Latin tongue, of a ſweet diſpoſition, and a well-poliſhed man." Fuller, in his church-hiſtory, ſays, "he was of a ſweet nature, conſtantly carrying about him the charms of a plauſible behaviour, of a fluent tongue, and good parts." His Hiſtory of Ireland, in two books, was written in 1570; and publiſhed, by Sir James Ware, from a manuſcript in the Cotton library, Dublin, 1633, folio. He wrote alſo *Chronologia univerſalis*, a very learned work; and various other tracts.

CAMPICURSIO, in the ancient military art, a march of armed men for ſeveral miles, from and back again to the camp, to inſtruct them in the military pace. This exerciſe was nearly akin to the *decurſio*, from which it only differed, in that the latter was performed by horſemen, the former alſo by foot.

CAMPIDOCTORES, or CAMPIDUCTORES, in the Roman army, were officers who inſtructed the ſoldiery in the diſcipline and exerciſes of war, and the art of handling their weapons to advantage. Theſe are alſo ſometimes called *campigeni*, and *armidoctores*. Campiductor || Camus.

CAMPIDUCTOR, in middle-age writers, ſignifies the leader or commander of an army, or party.

CAMPION, in *Botany*, the Engliſh name of the LYCHNIS.

CAMPION, a town of the kingdom of Tangut in Tartary. It was formerly remarkable for being a place through which the caravans paſſed in the road from Bukharia to China. E. Long. 104. 53. N. Lat. 40. 25.

CAMPISTRON, a celebrated French dramatic author, was born in 1656. Racine directed his poetical talents to the theatre, and aſſiſted him in his firſt pieces. He died in 1723.

CAMPITÆ, in church hiſtory, an appellation given to the Donatiſts, on account of their aſſembling in the fields for want of churches. For a ſimilar reaſon, they were alſo denominated *Montenſes* and *Rupitani*.

CAMPLI, or CAMPOLI, a town of Italy, in the kingdom of Naples, and in the farther Abruzzo, ſituated in E. Long. 13. 55. N. Lat. 42. 38.

CAMPO MAJOR, a town of the province of Alentejo in Portugal. W. Long. 7. 24. N. Lat. 38. 50.

CAMPREDON, a town of Catalonia in Spain, ſeated at the foot of the Pyrenean mountains. The fortifications were demoliſhed by the French in 1691. W. Long. 1. 56. N. Lat. 42. 20.

CAMPS, FRANCIS DE, abbot of Notre Dame at Sigi, was born at Amiens in 1643; and diſtinguiſhed himſelf by his knowledge of medals, by writing a hiſtory of France, and ſeveral other works. He died at Paris in 1723.

CAMPVERE. See VEER.

CAMPUS, in antiquity, a field or vacant plain in a city, not built upon, left vacant on account of ſhows, combats, exerciſes, or other uſes of the citizens.

Campus Maii, in ancient cuſtoms, an anniverſary aſſembly of our anceſtors held on May-day, when they confederated together for the defence of the kingdom againſt all its enemies.

Campus Martius, a large plain in the ſuburbs of ancient Rome, lying between the Quirinal and Capitoline mounts and the Tiber, thus called becauſe conſecrated to the god Mars, and ſet apart for military ſports and exerciſes to which the Roman youth were trained, as the uſe and handling of arms, and all manner of feats of activity. Here were the races run, either with chariots or ſingle horſes; here alſo ſtood the villa publica, or palace for the reception of ambaſſadors, who were not permitted to enter the city. Many of the public comitia were held in the ſame field, part of which was for that purpoſe cantoned out. The place was alſo nobly decorated with ſtatues, arches, columns, porticoes, and the like ſtructures.

Campus Sceleratus, a place without the walls of ancient Rome, where the Veſtals who had violated their vows of virginity were buried alive.

CAMUL, a town of Aſia, on the eaſtern extremity of the kingdom of Cialus, on the frontiers of Tangut. E. Lon. 98. 5. N. Lat. 37. 15.

CAMUS, a perſon with a low flat noſe, hollowed in the middle.

The

Camus || Canaan.

The Tartars are great admirers of camus beauties. Rubruquis obſerves, that the wife of the great Jenghiz Khan, a celebrated beauty, had only two holes for a noſe.

CAMUS, *John Peter*, a French prelate born in 1582. He was author of a number of pious romances (the taſte of his time), and other theological works, to the amount of 200 vols. His definition of politics is remarkable: *Ars non tam regendi, quam fallendi, homines;* "The art not ſo much of governing, as of deceiving mankind." He died in 1652.

CAN, in the ſea-language, as can-pump, a veſſel wherewith ſeamen pour water into the pump to make it go.

CAN-Buoy. See BUOY.

CAN-Hook, an inſtrument uſed to ſling a caſk by the ends of the ſtaves: it is formed by fixing a broad and flat hook at each end of a ſhort rope; and the tackle by which the caſk ſo ſlung may be hoiſted or lowered, is hooked to the middle of the rope.

CANA, in *Ancient Geography*, a town on the confines of the Upper and Lower Galilee: memorable for the turning water into wine (John). The birth place of Simeon, called *Canaanite* from this place, and of Nathanael.

CANAAN, the fourth ſon of Ham. The irreverence of Ham towards his father Noah is recorded in Gen. ix. Upon that occaſion the patriarch curſed him in a branch of his poſterity: "Curſed," ſays he, be Canaan; a ſervant of ſervants ſhall he be unto his brethren." This curſe being pronounced, not againſt Ham the immediate tranſgreſſor, but againſt his ſon, who does not appear, from the words of Moſes, to have been any ways concerned in the crime, hath occaſioned ſeveral conjectures. Some have believed that Noah curſed Canaan, becauſe he could not well have curſed Ham himſelf, whom God had not long before bleſſed. Others think Moſes's chief intent in recording this prediction was to raiſe the ſpirits of the Iſraelites, then entering on a terrible war with the children of Canaan, by the aſſurance, that, in conſequence of the curſe, that people were deſtined by God to be ſubdued by them. For the opinion of thoſe who imagine all Ham's race were here accurſed, ſeems repugnant to the plan words of Scripture, which confines the malediction to Canaan and his poſterity; and is alſo contrary to fact. Indeed, the prophecy of Noah, that Canaan "ſhould be a ſervant of ſervants to his brethren," ſeems to have been wholly completed in him. It was completed with regard to Shem, not only in that a conſiderable part of the ſeven nations of the Canaanites were made ſlaves to the Iſraelites, when they took poſſeſſion of their land, as part of the remainder of them were afterwards enſlaved by Solomon; but alſo by the ſubſequent expeditions of the Aſſyrians and Perſians, who were both deſcended from Shem; and under whom the Canaanites ſuffered ſubjection, as well as the Iſraelites; not to mention the conqueſt of part of Canaan by the Elamites, or Perſians, under Chedorlaomer, prior to them all. With regard to Japhet, we find a completion of the prophecy, in the ſucceſſive conqueſts of the Greeks and Romans in Paleſtine and Phœnicia, where the Canaanites were ſettled; but eſpecially in the total ſubverſion of the Carthaginian power by the Romans; beſides ſome invaſions of the northern nations, as the poſterity of Thogarma and Magog; wherein many of them, probably, were carried away captive. Canaan.

The poſterity of Canaan were very numerous. His eldeſt ſon was Sidon, who at leaſt founded and peopled the city of Sidon, and was the father of the Sidonians and Phœnicians. Canaan had beſides ten ſons, who were the fathers of ſo many peoples, dwelling in Paleſtine, and in part of Syria; namely, the Hittites, the Jebuſites, the Amorites, the Girgaſites, the Hivites, the Arkites, the Sinites, the Arvadites, the Zemarites, and Hamathites.

Land of CANAAN, the country ſo named from Canaan the ſon of Ham. It lies between the Mediterranean ſea and the mountains of Arabia, and extends from Egypt to Phœnicia. It is bounded to the eaſt by the mountains of Arabia; to the ſouth by the wilderneſs of Paran, Idumæa, and Egypt; to the weſt by the Mediterranean, called in Hebrew the Great ſea; to the north by the mountains of Libanus. Its length from the city of Dan (ſince called Cæſarea Philippi, or Paneadis, which ſtands at the foot of theſe mountains) to Beerſheba, is about 70 leagues; and its breadth from the Mediterranean ſea to the eaſtern borders, is in ſome places 30. This country, which was firſt called Canaan, from Canaan the ſon of Ham, whoſe poſterity poſſeſſed it, was afterwards called Paleſtine, from the people which the Hebrews call Philiſtines, and the Greeks and Romans corruptly Paleſtines, who inhabited the ſea coaſts, and were firſt known to them. It likewiſe had the name of the *Land of Promiſe*, from the promiſe God made Abraham of giving it to him; that of the *Land of Iſrael*, from the Iſraelites having made themſelves maſters of it; that of *Judah*, from the tribe of Judah, which was the moſt conſiderable of the twelve; and laſtly, the happineſs it had of being ſanctified by the preſence, actions, miracles, and death of Jeſus Chriſt, has given it the name of the *Holy Land*, which it retains to this day.

The firſt inhabitants of this land therefore were the Canaanites, who were deſcended from Canaan, and the eleven ſons of that patriarch. Here they multiplied extremely; trade and war were their firſt occupations; theſe gave riſe to their riches, and the ſeveral colonies ſcattered by them over almoſt all the iſlands and maritime provinces of the Mediterranean. The meaſure of their idolatry and abominations was completed, when God delivered their country into the hands of the Iſraelites. In St Athanaſius's time, the Africans ſtill ſaid they were deſcended from the Canaanites; and it is ſaid, that the Punic tongue was almoſt entirely the ſame with the Canaaniti ſh and Hebrew language. The colonies which Cadmus carried into Thebes in Bœotia, and his brother Cilix into Cilicia, came from the ſtock of Canaan. The iſles of Sicily, Sardinia, Malta, Cyprus, Corfu, Majorca, and Minorca, Gades and Ebuſus, are thought to have been peopled by the Canaanites. Bochart, in his large work entitled *Canaan*, has ſet all this matter in a good light.

Many of the old inhabitants of the north-weſt of the land of Canaan, however, particularly on the coaſt or territories of Tyre and Sidon, were not driven out by the children of Iſrael, whence this tract ſeems to have retained the name of Canaan a great while after

Canabac, Canada.

those other parts of the country, which were better inhabited by the Iſraelites, had loſt the ſaid name. The Greeks called this tract inhabited by the old Canaanites along the Mediterranean ſea, Phœnicia; the more inland parts, as being inhabited partly by Canaanites, and partly by Syrians, Syrophœnicia: and hence the woman ſaid by St Matthew (xv. 22.) to be a woman of Canaan, whoſe daughter Jeſus cured, is ſaid by St Mark (vii. 26.) to be a Syrophœnician by nation, as ſhe was a Greek by religion and language.

CANABAC, an iſland which lies contiguous to Bulam on the weſtern coaſt of Africa, and is inhabited by a fierce people, governed by two kings or chiefs. It would appear that the Canabacs had been very troubleſome to their neighbours; for the inhabitants of ſome other iſlands in that cluſter rejoiced at the ſettlement of the Engliſh in Bulam, hoping to find in them a defence againſt the uſurpations of this people.

CANADA, or the province of Quebec, an extenſive country of North America, bounded on the north-eaſt by the gulf of St Lawrence, and St John's river; on the ſouth-weſt, by lands inhabited by the ſavage Indians, which are frequently included in this province; on the ſouth, by the provinces of Nova Scotia, New England, and New York; and on the north-weſt, by other Indian nations. Under the name of *Canada*, the French comprehended a very large territory; taking into their claim part of New Scotland, New England, and New York on the eaſt; and extending it on the weſt as far as the Pacific ocean. That part, however, which was reduced by the Britiſh arms in the laſt war, lies between 61 and 81 degrees of weſt longitude, and between 45 and 52 of north latitude. The climate is not very different from that of the northern Britiſh colonies; but as it is much further from the ſea, and more to the northward, than moſt of thoſe provinces, it has a much ſeverer winter, though the air is generally clear; and, like moſt of thoſe American tracts that do not lie too far to the northward, the ſummers are very hot, and exceeding pleaſant. The ſoil in general is very good, and in many parts extremely fertile; producing many different ſorts of grains, fruits, and vegetables. The meadow grounds, which are well watered, yield excellent graſs, and breed vaſt numbers of great and ſmall cattle. The uncultivated parts are a continued wood, compoſed of prodigiouſly large and lofty trees, of which there is ſuch a variety of ſpecies, that even of thoſe who have taken moſt pains to know them, there is not perhaps one that can tell half the number. Canada produces, among others, two ſorts of pines, the white and the red; four ſorts of firs; two ſorts of cedar and oak, the white and the red; the male and female maple; three ſorts of aſh trees, the free, the mungrel, and the baſtard; three ſorts of walnut-trees, the hard, the ſoft, and the ſmooth; vaſt numbers of beech-trees and white wood; white and red elms, and poplars. The Indians hollow the red elms into canoes, ſome of which made out of one piece will contain 20 perſons: others are made of the bark; the different pieces of which they ſew together with the inner rind, and daub over the ſeams with pitch, or rather a bituminous matter reſembling pitch, to prevent their leaking; the ribs of theſe canoes are made of boughs of trees. In the hollow elms, the bears and wild cats take up their lodging from November to April. The country produces alſo a vaſt variety of other vegetables, particularly tobacco, which thrives well. Near Quebec is a fine lead mine, and many excellent ones of iron have been diſcovered. It hath alſo been reported that ſilver is found in ſome of the mountains. The rivers are extremely numerous, and many of them very large and deep. The principal are, the Ouattauais, St John's, Seguinay, Deſpaires, and Trois Rivieres; but all theſe are ſwallowed up by the great river St Lawrence. This river iſſues from the lake Ontario; and, taking its courſe north-eaſt, waſhes Montreal, where it receives the Ouattauais, and forms many fertile iſlands. It continues the ſame courſe, and meets the tide upwards of 400 miles from the ſea, where it is navigable for large veſſels; and below Quebec, 320 miles from the ſea, it becomes ſo broad and ſo deep, that ſhips of the line contributed in the laſt war to reduce that city. After receiving in its progreſs innumerable ſtreams, it at laſt falls into the ocean at Cape Roſiers, where it is 90 miles broad, and where the cold is intenſe and the ſea boiſterous. This river is the only one upon which any ſettlements of note are as yet formed; but it is very probable, that, in time to come, Canada, and thoſe vaſt regions to the weſt, may be enabled of themſelves to carry on a conſiderable trade upon the great lakes of freſh water which theſe countries environ. Here are five lakes, the leaſt of which is of greater extent than the freſh-water lakes to be found in any other part of the world: theſe are the lake Ontario, which is not leſs than 200 leagues in circumference; Erie, or Oſwego, longer, but not ſo broad, is about the ſame extent. That of the Huron ſpreads greatly in width, and is about 300 leagues in circuit; as alſo is that of Michigan, though like lake Erie it is rather long, and comparatively narrow. But the lake Superior is larger than any of theſe, being not leſs than 500 leagues in circumference. All theſe are navigable by any veſſels, and they all communicate with each other; but the paſſage between Erie and Ontario is interrupted by a moſt ſtupendous fall or cataract, called the *falls of Niagara**. The river St Lawrence, as already obſerved, is the outlet of theſe lakes, by which they diſcharge themſelves into the ocean. The French built forts at theſe ſeveral ſtraits, by which the lakes communicate with one another, and on that where the laſt of them communicates with the river. By theſe, while the country was in their poſſeſſion, they effectually ſecured to themſelves the trade of the lakes, and preſerved an influence over all the Indian nations that lie near them.

Canada.

* See *Niagara*.

The moſt curious and intereſting part of the natural hiſtory of Canada is the animals there produced. Theſe are ſtags, elks, deer, bears, foxes, martins, wild cats, ferrets, weaſels, large ſquirrels of a greyiſh hue, hares and rabbits. The ſouthern parts, in particular, breed great numbers of wild bulls, divers ſorts of roebucks, goats, wolves, &c. The marſhes, lakes, and pools, with which this country abounds, ſwarm with otters and beavers, of which the white are highly valued, as well as the right black kind. A vaſt variety of birds are alſo to be found in the woods; and the river St Lawrence abounds with ſuch quantities of fiſh, that it is affirmed by ſome writers, this would be a more profitable article than even the fur-trade.—There are

in

Canada. in Canada a multitude of different Indian tribes: but these are observed to decrease in number where the Europeans are most numerous; owing chiefly to the immoderate use of spirituous liquors, of which they are excessively fond. Their manners and way of living we have already particularly described†. The principal towns are Quebec, Trois Rivieres, and Montreal. The commodities required by the Canadians from Europe are, wine, or rather rum; cloths, chiefly coarse; linens, and wrought iron. The Indian trade requires rum, tobacco, a sort of duffil blankets, guns, powder, balls, and flints, kettles, hatchets, toys, and trinkets of all kinds. While the country was in possession of the French, the Indians supplied them with poultry; and the French had traders, who, like the original inhabitants, traversed the vast lakes and rivers in canoes, with incredible industry and patience, carrying their goods into the remotest parts of America, and among nations entirely unknown to us. These again brought the furs, &c. home to them, as the Indians were thereby habituated to trade with them. For this purpose, people from all parts, even from the distance of 1000 miles, came to the French fair at Montreal, which began in June, and sometimes lasted three months. On this occasion many solemnities were observed, guards were placed, and the governor assisted to preserve order in so great and various a concourse of savage nations. But sometimes great disorders and tumults happened; and the Indians frequently gave for a dram all that they were possessed of. It is remarkable, that many of these nations actually passed by the English settlement of Albany in New York, and travelled 200 miles further to Montreal, though they could have purchased the goods they wanted cheaper at the former.

† See *America.*

Since Britain became possessed of Canada, our trade with that country has generally employed 34 ships and 400 seamen; their exports, at an average of three years, in skins, furs, ginseng, snake-root, capillaire, and wheat, amount to 150,000l. Their imports from Great Britain are computed at nearly the same sum. It will, however, be almost impossible to overcome certain inconveniences arising from the violence of the winter. This is so excessive from December to April, that the broadest rivers are frozen over, and the snow lies commonly from four to six feet deep on the ground, even in those parts of the country which lie three degrees south of London, and in the temperate latitude of Paris. Another inconvenience arises from the falls in the river St Lawrence below Montreal, which prevent ships from penetrating to that emporium of inland commerce. Our communication therefore with Canada, and the immense regions beyond it, will always be interrupted during the winter-season, until roads are formed that can be travelled without danger from the Indians. For these savage people often commit hostilities against us, without any previous notice; and frequently, without any provocation, they commit the most horrid ravages for a long time with impunity.

Canada was undoubtedly discovered by Sebastian Cabot, the famous Italian adventurer, who sailed under a commission from Henry VII. But though the English monarch did not think proper to make any use of this discovery, the French quickly attempted it; we have an account of their fishing for cod on the banks of Newfoundland, and along the sea-coast of Canada, in the beginning of the 16th century. About the year 1506, one Denys, a Frenchman, drew a map of the gulf of St Lawrence; and two years after, one Aubort, a ship-master of Dieppe, carried over to France some of the natives of Canada. As the new country, however, did not promise the same amazing quantities of gold and silver produced by Mexico and Peru, the French for some years neglected the discovery. At last, in the year 1523, Francis I. a sensible and enterprising prince, sent four ships, under the command of Verazani, a Florentine, to prosecute discoveries in that country. The particulars of this man's first expedition are not known. All we can learn is, that he returned to France, and next year he undertook a second. As he approached the coast, he met with a violent storm; however, he came so near as to perceive the natives on the shore, making friendly signs to him to land. This being found impracticable by reason of the surf upon the coast, one of the sailors threw himself into the sea; but, endeavouring to swim back to the ship, a surge threw him on shore without signs of life. He was, however, treated by the natives with such care and humanity, that he recovered his strength, and was allowed to swim back to the ship, which immediately returned to France. This is all we know of Verazani's second expedition. He undertook a third, but was no more heard of, and it is thought that he and all his company perished before he could form any colony. In 1534, one Jaques Cartier of St Maloes set sail under a commission from the French king, and on the 10th of May arrived at Cape Bonavista in Newfoundland. He had with him two small ships besides the one in which he sailed. He cruised along the coast of that island, on which he discovered inhabitants, probably the Eskimaux. He landed in several places along the coast of the gulf, and took possession of the country in the king's name. On his return, he was again sent out with a commission, and a pretty large force: he returned in 1535, and passed the winter at St Croix; but the season proved so severe, that he and his companions must have died of the scurvy, had they not, by the advice of the natives, made use of the decoction of the tops and bark of the white pines. As Cartier, however, could produce neither gold nor silver, all that he could say about the utility of the settlement was disregarded; and in 1540, he was obliged to become pilot to one M. Roberval, who was by the French king appointed viceroy of Canada, and who sailed from France with five vessels. Arriving at the gulf of St Lawrence, they built a fort; and Cartier was left to command the garrison in it, while Roberval returned to France for additional recruits to his new settlement. At last, having embarked in 1549, with a great number of adventurers, neither he nor any of his followers were heard of more. Canada.

This fatal accident so greatly discouraged the court of France, that, for 50 years, no measures were taken for supplying with necessaries the settlers that were left. At last, Henry IV. appointed the marquis de la Roche lieutenant-general of Canada and the neighbouring countries. In 1598 he landed on the isle of Sable, which he absurdly thought to be a proper place for a settlement, though it was without any port, and without product except briars. Here he left about 40 malefactors, the refuse of the French jails. After cruizing

Canada, Canal.

for ſome time on the coaſt of Nova Scotia, without being able to relieve theſe poor wretches, he returned to France, where he died of a broken heart. His colony muſt have periſhed, had not a French ſhip been wrecked on the iſland, and a few ſheep driven upon it at the ſame time. With the boards of the ſhip they erected huts; and while the ſheep laſted they lived on them, feeding afterwards on fiſh. Their clothes wearing out, they made coats of ſeal-ſkins; and in this miſerable condition they ſpent ſeven years, when Henry ordered them to be brought to France. The king had the curioſity to ſee them in their ſeal-ſkin dreſſes, and was ſo moved with their appearance, that he forgave them all their offences, and gave each of them 50 crowns to begin the world anew.

In 1600, one Chauvin, a commander in the French navy, attended by a merchant of St Malo, called *Pontgrave*, made a voyage to Canada, from whence he returned with a very profitable quantity of furs. Next year he repeated the voyage with the ſame good fortune, but died while he was preparing for a third. The many ſpecimens of profit to be made by the Canadian trade, at laſt induced the public to think favourably of it. An armament was equipped, and the command of it given to Pontgrave, with powers to extend his diſcoveries up the river St Lawrence. He ſailed in 1603, having in his company Samuel Champlain, who had been a captain in the navy, and was a man of parts and ſpirit. It was not, however, till the year 1608, that the colony was fully eſtabliſhed. This was accompliſhed by founding the city of Quebec, which from that time commenced the capital of all the ſettlements in Canada. The colony, however, for many years continued in a low way, and was often in danger of being totally exterminated by the Indians. As the particulars of theſe wars, however, could neither be entertaining, nor indeed intelligible, to many of our readers, we chooſe to omit them, and in general obſerve, that the French not only concluded a permanent peace with the Indians, but ſo much ingratiated themſelves with them, that they could with the greateſt eaſe prevail upon them at any time to murder and ſcalp the Engliſh in their ſettlements. Theſe practices had a conſiderable ſhare in bringing about the laſt war with France, when the whole country was conquered by the Britiſh in 1761. The moſt remarkable tranſaction in this conqueſt was the ſiege of QUEBEC; for a particular account of which, ſee that article. And for the tranſactions here during the late American war, ſee AMERICA (United States of).

CANAL *of* COMMUNICATION, an artificial cut in the ground, ſupplied with water from rivers, ſprings, &c. in order to make a navigable communication betwixt one place and another.

The particular operations neceſſary for making artificial navigations depend upon a number of circumſtances. The ſituation of the ground; the vicinity or connection with rivers; the eaſe or difficulty with which a proper quantity of water can be obtained; theſe and many other circumſtances neceſſarily produce great variety in the ſtructure of artificial navigations, and augment or diminiſh the labour and expence of executing them. When the ground is naturally level, and unconnected with rivers, the execution is eaſy, and the navigation is not liable to be diſturbed by floods; but, when the ground riſes and falls, and cannot be reduced to a level, artificial methods of raiſing and lowering veſſels muſt be employed; which likewiſe vary according to circumſtances. Canal.

A kind of temporary ſluices are ſometimes employed for raiſing boats over falls or ſhoals in rivers by a very ſimple operation. Two poſts or pillars of maſon-work, with grooves, are fixed, one on each bank of the river, at ſome diſtance below the ſhoal. The boat having paſſed theſe poſts, planks are let down acroſs the river by pullies into the grooves, by which the water is dammed up to a proper height for allowing the boat to paſs up the river over the ſhoal.

The Dutch and Flemings at this day ſometimes, when obſtructed by caſcades, form an inclined plane or rolling-bridge upon dry land, alongſt which their veſſels are drawn from the river below the caſcade into the river above it. This, it is ſaid, was the only method employed by the ancients, and is ſtill uſed by the Chineſe, who are ſaid to be entirely ignorant of the nature and utility of locks. Theſe rolling-bridges conſiſt of a number of cylindrical rollers which turn eaſily on pivots, and a mill is commonly built near by, ſo that the ſame machinery may ſerve the double purpoſe of working the mill and drawing up veſſels.

A LOCK is a baſon placed lengthwiſe in a river or canal, lined with walls of maſonry on each ſide, and terminated by two gates, placed where there is a caſcade or natural fall of the country; and ſo conſtructed, that the baſon being filled with water by an upper ſluice to the level of the waters above, a veſſel may aſcend through the upper gate; or the water in the lock being reduced to the level of the water at the bottom of the caſcade, the veſſel may deſcend through the lower gate; for when the waters are brought to a level on either ſide, the gate on that ſide may be eaſily opened. But, as the lower gate is ſtrained in proportion to the depth of water it ſupports, when the perpendicular height of the water exceeds 12 or 13 feet, more locks than one become neceſſary. Thus, if the fall be 17 feet, two locks are required, each having $8\frac{1}{2}$ feet fall; and if the fall be 26 feet, three locks are neceſſary, each having 8 feet 8 inches fall. The ſide-walls of a lock ought to be very ſtrong. Where the natural foundation is bad, they ſhould be founded on piles and platforms of wood: they ſhould likewiſe ſlope outwards, in order to reſiſt the preſſure of the earth from behind.

Plate CXXXIV. fig. 1. A perſpective view of part of a canal: the veſſel L, within the lock AC.—Fig. 2. Section of an open lock: the veſſel L about to enter.—Fig. 3. Section of a lock full of water; the veſſel L raiſed to a level with the water in the ſuperior canal.—Fig. 4. Ground ſection of a lock. L, a veſſel in the inferior canal. C, the under gate. A, the upper gate. GH, a ſubterraneous paſſage for letting water from the ſuperior canal run into the lock. KF, a ſubterraneous paſſage for water from the lock to the inferior canal.

X and Y, (fig. 1.) are the two floodgates, each of which conſiſts of two leaves, reſting upon one another, ſo as to form an obtuſe angle, in order the better to reſiſt the preſſure of the water. The firſt (X) prevents the water of the ſuperior canal from falling into the lock; and the ſecond (Y) dams up and ſuſtains

Canal. ſtains the water in the lock. Theſe flood-gates ought to be very ſtrong, and to turn freely upon their hinges. In order to make them open and ſhut with eaſe, each leaf is furniſhed with a long lever A *b*, A *b*; C*b*, C *b*. They ſhould be made very tight and cloſe, that as little water as poſſible may be loſt.

By the ſubterraneous paſſage G H (fig. 2, 3, & 4.) which deſcends obliquely, by opening the ſluice G, the water is let down from the ſuperior canal D into the lock, where it is ſtopt and retained by the gate C when ſhut, till the water in the lock comes to be on a level with the water in the ſuperior canal D; as repreſented, fig. 3. When, on the other hand, the water contained by the lock is to be let out, the paſſage G H muſt be ſhut by letting down the ſluice G; the gate A muſt be alſo ſhut, and the paſſage K F opened by raiſing the ſluice K: a free paſſage being thus given to the water, it deſcends through K F, into the inferior canal, until the water in the lock is on a level with the water in the inferior canal B; as repreſented, fig. 2.

Now, let it be required to raiſe the veſſel L (fig. 2.) from the inferior canal B to the ſuperior one D; if the lock happens to be full of water, the ſluice G muſt be ſhut, and alſo the gate A, and the ſluice K opened, ſo that the water in the lock may run out till it is on a level with the water in the inferior canal B. When the water in the lock comes to be on a level with the water at B, the leaves of the gate C are opened by the levers C *b*, which is eaſily performed, the water on each ſide of the gate being in equilibrio; the veſſel then ſails into the lock. After this the gate C and the ſluice K are ſhut, and the ſluice G opened, in order to fill the lock, till the water in the lock, and conſequently the veſſel, be upon a level with the water in the ſuperior canal D; as is repreſented in fig. 3. The gate A is then opened, and the veſſel paſſes into the canal D.

Again, let it be required to make a veſſel deſcend from the canal D into the inferior canal B. If the lock is empty, as in fig. 2. the gate C and ſluice K muſt be ſhut, and the upper ſluice G opened, ſo that the water in the lock may riſe to a level with the water in the upper canal D. Then open the gate A, and let the veſſel paſs through into the lock. Shut the gate A and the ſluice G; then open the ſluice K, till the water in the lock be on a level with the water in the inferior canal; then the gate C is opened, and the veſſel paſſes along into the canal B, as was required.

Scarcity of water becomes a very ſerious inconvenience to navigation in thoſe places where locks are neceſſary, as, without a ſufficient ſupply, it muſt be frequently interrupted. To ſave water, therefore, has been an important conſideration in the conſtruction of locks. Various attempts have been made for this purpoſe. We ſhall here give an account of one which has been propoſed by Mr Playfair architect in London. "The nature and principle of this manner of ſaving water, ſays the inventor, conſiſts in letting the water which has ſerved to raiſe or fall a boat or barge from the lock, paſs into reſervoirs or ciſterns, whoſe apertures of communication with the lock are upon different levels, and which may be placed or conſtructed at the ſide or ſides of the lock with which they communicate, or in any other contiguous ſituation that circumſtances may render eligible; which Canal. apertures may be opened or ſhut at pleaſure, ſo that the water may paſs from the lock to each reſervoir of the canal, or from each reſervoir to the lock, in the following manner: The water which fills the lock, when a boat is to aſcend or deſcend, inſtead of being paſſed immediately into the lower part of the canal, is let paſs into theſe ciſterns or reſervoirs, upon different levels; then, their communications with the lock being ſhut, they remain full until another veſſel is wanted to paſs; then, again, the ciſterns are emptied into the lock, which is thereby nearly filled, ſo that only the remainder which is not filled is ſupplied from the higher part of the canal. Each of theſe ciſterns muſt have a ſurface not leſs than that of the lock, and muſt contain half as much water as is meant to be expended for the paſſing of each veſſel. The ciſtern the moſt elevated is placed twice its own depth (meaſuring by the aperture, or communicating opening of the ciſterns) under the level of the water in the higher part of the canal. The ſecond ciſtern is placed once its own depth under the firſt, and ſo on are the others, to the loweſt; which laſt is placed once its own depth above the level of the water in the lower part of the canal. The apertures of the intermediate ciſterns, whatever their number may be, muſt all be equally divided into different levels; the ſurface of the water in the one being always on the level of the bottom of the aperture of the ciſtern which is immediately above. As an example of the manner and rule for conſtructing theſe ciſterns, ſuppoſe that a lock is to be conſtructed twelve feet deep, that is, that the veſſel may aſcend or deſcend twelve feet in paſſing. Suppoſe the lock ſixty feet long and ſix feet wide, the quantity of water required to fill the lock, and to paſs a boat, is 4320 cubic feet; and ſuppoſe that, in calculating the quantity of water that can be procured for ſupplying the canal, after allowing for waſte, it is found (according to the number of boats that may be expected to paſs) that there will not be above 800 cubic feet for each; then it will be neceſſary to ſave five-ſixths of the whole quantity that in the common caſe would be neceſſary: to do which ten ciſterns muſt be made (the mode of placing which is expreſſed in the drawing, fig. 5. Plate CXXXIV,) each of which muſt be one foot deep, or deeper at pleaſure, and each muſt have a ſurface of 360 feet ſquare, equal to the ſurface of the lock. The bottom of the aperture of the loweſt ciſtern muſt be placed one foot above the level of the water in the lower part of the canal, or eleven feet under the level of the high water; the ſecond ciſtern muſt be two feet above the level of the low water; the third three feet, and ſo on of the others; the bottom of the tenth, or uppermoſt ciſtern, being ten feet above the low water, and two feet lower than the high water; and, as each ciſtern muſt be twelve inches in depth, the ſurface of the water in the higher ciſtern will be one foot under the level of the water in the upper part of the canal. The ciſterns being thus conſtructed, when the lock is full, and the boat to be let down, the communications between the lock and the ciſterns, which until then have all been ſhut, are to be opened in the following manner; firſt, the communication with the higher ciſtern is opened, which, being at bottom two feet under the level of the water in the

lock,

Canal. lock, is filled to the depth of one foot, the water in the lock deſcending one foot alſo at the ſame time; that communication is then ſhut, and the communication between the lock and the ſecond ciſtern is opened; one foot more of the water then paſſes into that ciſtern from the lock, and fills it; the opening is then ſhut: the ſame is done with the third, fourth, fifth, ſixth, ſeventh, eighth, ninth, and tenth ciſterns, one by one, until they are all filled; and, when the tenth, or lowermoſt ciſtern, is filled, there remains but two feet depth of water in the lock. The communication between the lock and the lower part of the canal is then opened, and the laſt two feet depth of water is emptied into the lower part of the canal. By this means, it is evident, that, inſtead of twelve feet depth of water being let deſcend into the lower part of the canal, there is only two feet depth that deſcends, or one-ſixth of the whole; therefore, inſtead of 4320 cubic feet being uſed, there are only 720 cubic feet uſed: the remainder of the water in the ciſterns being uſed as follows. When another boat is to mount, the ſluices being then ſhut, and the boat in the lock, the tenth or lowermoſt ciſtern is emptied into the lock, which it fills one foot; the communication being then ſhut, the next loweſt ciſtern, or the ninth, is emptied into the lock, which is thereby filled another foot; and ſo, in like manner, all the other ciſterns are emptied one after another, until the higher ciſtern being emptied, which fills the tenth foot of water in the lock, there remains but two feet of water to fill, which is done from the upper part of the canal, by opening the higher ſluice to paſs the boat; by that means, the ſame quantity of water deſcends from the upper part of the canal into the lock, that in the other caſe deſcended from the lock into the lower part of the canal; ſo that, in both caſes, the ſame quantity of water is ſaved, that is, five-ſixths of what would be neceſſary were there no ciſterns. Suppoſe again that, upon the ſame canal, and immediately after the twelve feet lock, it would be advantageous to conſtruct one of eighteen feet; then, in order not to uſe any greater quantity of water, it will be neceſſary to have ſixteen ciſterns, upon different levels, communicating with the lock in the ſame manner. Should, again, a lock of only ſix feet be wanted, after that of eighteen, then it will only be neceſſary to have four ciſterns on different levels, and ſo of any other height of lock. The rule is this: for finding the number and ſize of the ciſterns, each ciſtern being the ſame in ſuperficies with the lock, its depth muſt be ſuch as to contain one half the quantity of water meant to be uſed in the paſſing of one boat. The depth of the lock, divided by the depth neceſſary for ſuch a ciſtern, will give, in all caſes, the whole number of ciſterns, and two more: deduct the number two, therefore, from the number which you find by dividing the depth of the lock by the depth of one ciſtern, and you have always the number of ciſterns required; which are to be placed upon different levels, according to the rule already given. The above is the principle and manner of uſing the lock, for ſaving water in canals, and for enabling engineers to conſtruct locks of different depths upon the ſame canal, without uſing more water for the deep locks than for the ſhallow ones. With regard to the manner of diſpoſing the ciſterns, the circumſtances of the ground, the declivity, &c. will be the beſt guide for the engineer." Canal.

But even when water is abundant, if the declivity of a country be ſuch as to require numerous locks, navigation ſuffers great interruption from them. A method by which boats could be raiſed and lowered with greater facility, or in a ſhorter time than can be done by means of locks is ſtill a very deſirable object of improvement in inland navigation. For this purpoſe the inclined plane has been often reſorted to, and particularly in China, where water-carriage is more generally employed than in any country of Europe. But this method requires very powerful machinery or a great number of hands, which has prevented it from being much practiſed in this country. Other contrivances to obviate the uſe of locks have been propoſed. Dr Anderſon, in his Agricultural Survey of the County of Aberdeen, has deſcribed one, of which we ſhall give an account in his own words. This contrivance, he obſerves, "in the opinion of very good judges of matters of this ſort, to whom the plan has been ſhewn, has been deemed fully adequate to the purpoſe of raiſing and lowering boats of a moderate ſize, that is, of 20 tons, or downwards; and it is the opinion of moſt men with whom I have converſed, who are beſt acquainted with the inland navigations, that a boat of from 10 to 15 tons is better than thoſe of a larger ſize. When ſeveral are wanted to be ſent at once, they may be affixed to one another, as many as the towing-horſe can conveniently draw. Were boats of this ſize adopted, and were all the boats on one canal to be of the ſame dimenſions, it would prove a great convenience to a country in a ſtate of beginning improvements; becauſe the expence of ſuch a boat would be ſo trifling, that every farmer could have one for himſelf, and might of courſe make uſe of it when he pleaſed, by the aid of his own horſe, without being obliged to have any dependence on the time that might ſuit the convenience of his neighbour; and if two or more boats were going from the ſame neighbourhood, one horſe could ſerve the whole.

"You are to ſuppoſe that fig. 6. Plate CXXXIV. repreſents a bird's-eye view of this ſimple apparatus, as ſeen from above. A is ſuppoſed to be the upper reach of the canal, and B the lower reach, with the apparatus between the two. This conſiſts of three diviſions; the middle one, extending from C to D, is a ſolid piece of maſonry, raiſed from a firm foundation below the level of the bottom of the ſecond reach; this is again divided into five parts, viz. *d d d*, where the wall riſes only to the height of the water in the upper reach, and *e e*, two pillars, raiſed high enough to ſupport the pivots of a wheel or pulley *g*, placed in the poſition there marked.

"The ſecond diviſion *h* conſiſts of a wooden coffer, of the ſame depth nearly as the water in the upper reach, and of a ſize exactly fitted to contain one of the boats. This communicates directly with the upper reach, and being upon the ſame plane with it, and ſo connected with it as to be water-tight, it is evident, from inſpection, that nothing can be more eaſy than to float a boat into this coffer from the upper reach, the part of the wheel that projects over it being at a ſufficient height above it, ſo as to occaſion no ſort of interruption.

"Third

Fig. 1. Perspective View of part of a Canal with Locks.

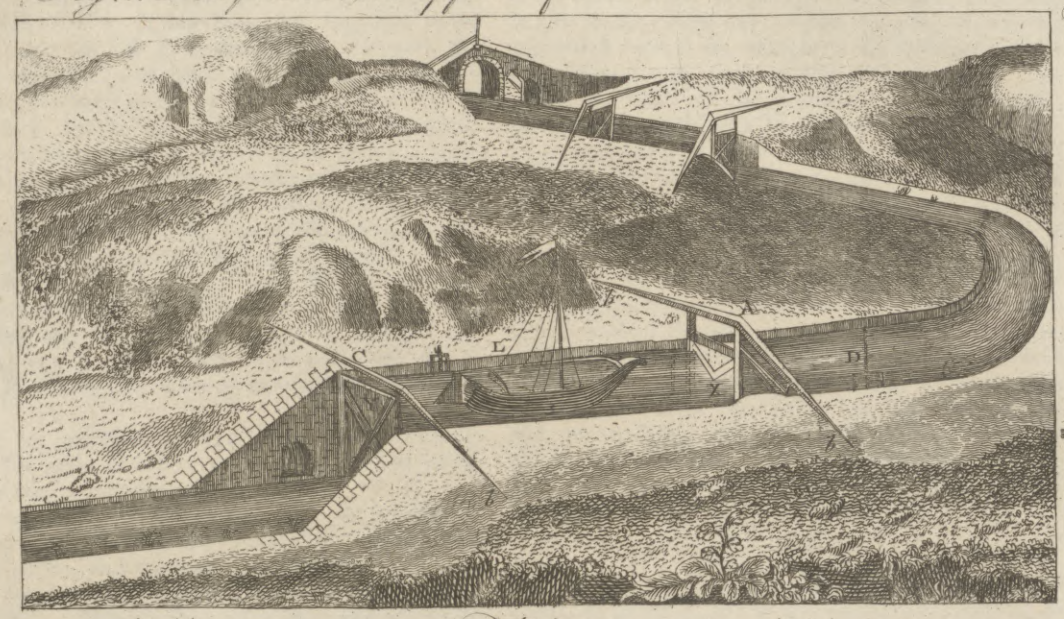


Fig. 7.

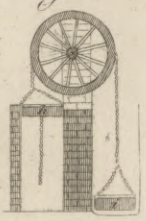


Fig. 8.

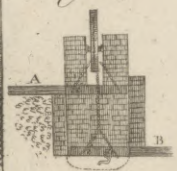


Fig. 2. Section of a Lock.

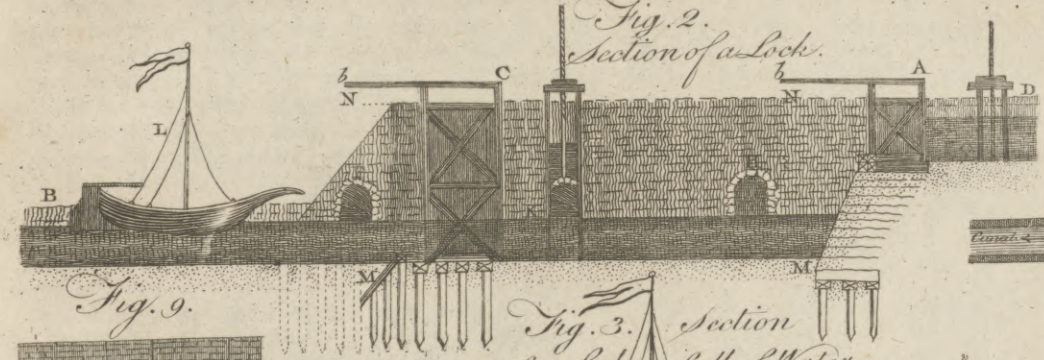


Fig. 5.

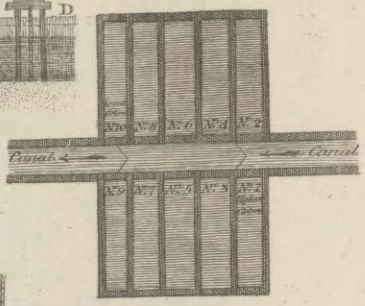


Fig. 9.

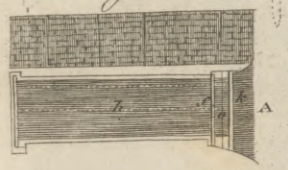


Fig. 3. Section of a Lock full of Water.

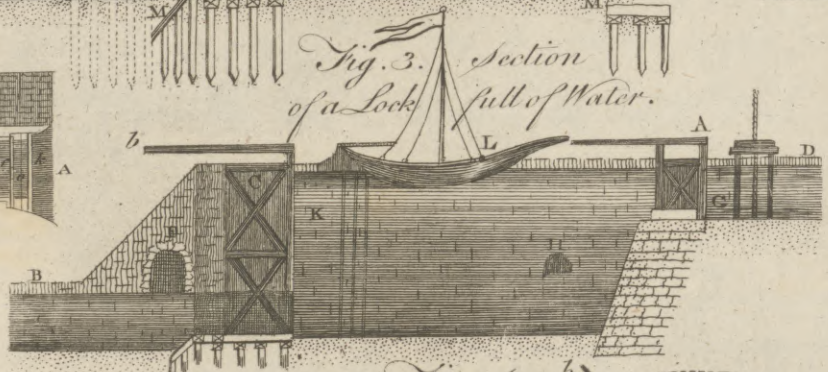


Fig. 6.

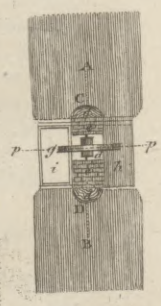


Fig. 10.

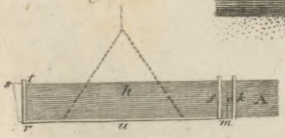


Fig. 4. plan of a Lock.

A. Bell Prin. Wal. Sculptor fecit.

Canals.

"Third diviſion. At *i* is repreſented another coffer, preciſely of the ſame dimenſions with the firſt. But here two ſluices, which were open in the former, and only repreſented by dotted lines, are ſuppoſed to be ſhut, ſo as to cut off all communication between the water in the canal and that in the coffer. As it was impoſſible to repreſent this part of the apparatus on ſo ſmall a ſcale, for the ſake of illuſtration it is repreſented more at large in fig. 9. where A, as before, repreſents the upper reach of the canal, and *h* one of the coffers. The ſluice *k* goes into two cheeks of wood, joined to the maſonry of the dam of the canal, ſo as to fit perfectly cloſe; and the ſluice *f* fits, equally cloſe, into cheeks made in the ſide of the coffer for that purpoſe; between theſe two ſluices is a ſmall ſpace *o*. The coffer, and this diviſion *o*, are to be ſuppoſed full of water, and it will be eaſy to ſee that theſe ſluices may be let down, or drawn up at pleaſure, with much facility.

"Fig. 10. repreſents a perpendicular ſection of theſe parts in the ſame direction as in fig. 9. and in which the ſame letters repreſent the ſame parts.

"Things being thus arranged, you are to ſuppoſe the coffer *h* to be ſuſpended, by means of a chain paſſed over the pulley, and balanced by a weight that is ſufficient to counterpoiſe it, ſuſpended at the oppoſite end of the chain. Suppoſe, then, that the counterpoiſe be made ſomewhat lighter than the coffer with its contents, and that the line *m n* (fig. 10.) repreſents a diviſion between the ſolid ſides of the dam of ſeparation, which terminates the upper reach, and the wooden coffer, which had been cloſed only by the preſſure of its own weight (being puſhed a very little from A towards B, beyond its preciſe perpendicular ſwing), and that the joining all round is covered with liſts of cloth put upon it for that purpoſe; it is evident that, ſo long as the coffer is ſuſpended to this height, the joining muſt be water-tight; but no ſooner is it lowered down a little than this joining opens, the water in the ſmall diviſion *o* is allowed to run out, and an entire ſeparation is made between the fixed dam and this moveable coffer, which may be lowered down at pleaſure without loſing any part of the water it contained.

"Suppoſe the coffer now perfectly detached, turn to fig. 7. which repreſents a perpendicular ſection of this apparatus, in the direction of the dotted line *p p* (fig. 6.) In fig. 7. *h* repreſents an end view of the coffer, indicated by the ſame letter as in fig. 6. ſuſpended by its chain, and now perfectly detached from all other objects, and balanced by a counterpoiſe *i*, which is another coffer exactly of the ſame ſize, as low down as the level of the lower reach. From inſpection only it is evident, that, in proportion as the one of theſe weights riſes, the other muſt deſcend. For the preſent, then, ſuppoſe that the coffer *h* is by ſome means rendered more weighty than *i*, it is plain it will deſcend while the other riſes; and they will thus continue till *h* comes down to the level of the lower reach, and *i* riſes to the level of the higher one.

"Fig. 8. repreſents a ſection in the direction AB (fig. 6.), in which the coffer *i* (ſeen in both ſituations) is ſuppoſed to have been gradually raiſed from the level of the lower reach B, to that of the higher one where it now remains ſtationary; while the coffer *h* (which is concealed behind the maſonry) has deſcended in the mean time to the level of the lower reach, where it cloſes by means of the juncture *r s*, fig. 10. (which juncture is covered with liſts of cloth, as before explained at *m n*, and is of courſe become water-tight.) when, by lifting the ſluice *t*, and the correſponding ſluice at the end of the canal, a perfect communication by water is eſtabliſhed between them. If, then, inſtead of water only, this coffer had contained a boat, floated into it from the upper reach, and then lowered down, it is very plain, that when theſe ſluices were removed, after it had reached the level of the lower reach, that boat might have been floated out of the coffer with as much facility as it was let into it above. Here then we have a boat taken from the higher into the lower canal; and, by reverſing this movement, it is very obvious that it might be, with equal eaſe, raiſed from the lower into the higher one. It now only remains that I ſhould explain by what means the equilibrium between theſe counter-balancing weights can be deſtroyed at pleaſure, and the motion of courſe produced.

"It is very evident, that if the two correſponding coffers be preciſely of the ſame dimenſions, their weight will be exactly the ſame when they are both filled to the ſame depth of water. It is equally plain, that ſhould a boat be floated into either or both of them, whatever its dimenſions or weight may be, ſo that it can be contained afloat in the coffer, the weight of the coffer and its contents will continue preciſely the ſame as when it was filled with water only: hence, then, ſuppoſing one boat is to be lowered, or one to be raiſed at a time, or ſuppoſing one to be raiſed and another lowered at the ſame time—they remain perfectly in equilibrium in either place, till it is your pleaſure to deſtroy that equilibrium. Suppoſe, then, for the preſent, that both coffers are loaded with a boat in each, the double ſluices both above and below cloſed; and ſuppoſe alſo that a ſtop-cock *u*, in the under edge of the ſide of the lower coffer (fig. 8. and 10.), is opened, ſome of the water which ſerved to float the boat in the coffer will flow out of it, and conſequently that coffer will become lighter than the higher one; the upper coffer will of courſe deſcend, while the other mounts upwards. When a gentle motion has been thus communicated, it may be prevented from accelerating, merely by turning the ſtop-cock ſo as to prevent the loſs of more water, and thus one coffer will continue to aſcend, and the other to deſcend, till they have aſſumed their ſtations reſpectively; when, in conſequence of a ſtop below, and another above, they are rendered ſtationary at the level of the reſpective canals (A).

"Preciſely the ſame effect will be produced when the coffers are filled entirely with water.

"It is unneceſſary to add more to this explanation, except to obſerve, that the ſpace for the coffer to deſcend into muſt be deeper than the bottom of the lower canal,

(A) "It does not ſeem neceſſary to adopt any other contrivance than the above for regulating the motions; but if it ſhould be found neceſſary, it would be eaſy to put a ratch-wheel on the ſame axle.

Canals.

canal, in order to allow a free deſcent for the coffer to the requiſite depth; and of courſe it will be neceſſary to have a ſmall conduit to allow the water to get out of it. Two or three inches free, below the bottom of the canal, is all that would be neceſſary.

"Where the height is inconſiderable, there will be no occaſion for providing any counterpoiſe for the chain, as that will give only a ſmall addition to the weight of the undermoſt coffer, ſo as to make it preponderate, in circumſtances where the two coffers would otherwiſe be in perfect equilibrium: but, where the height is conſiderable, there will be a neceſſity for providing ſuch a counterpoiſe; as, without it, the chain, by becoming more weighty every foot it deſcended, would tend to deſtroy the equilibrium too much, and accelerate the motion to an inconvenient degree. To guard againſt this inconvenience, let a chain of the ſame weight, per foot, be appended at the bottom of each coffer, of ſuch a length as to reach within a few yards of the ground where the coffer is at its greateſt height (ſee fig. 7.); it will act with its whole weight upon the higheſt coffer while in this poſition; but, as that gradually deſcended, the chain would reach the ground, and, being there ſupported, its weight would be diminiſhed in proportion to its deſcent; while the weight of the chain on the oppoſite ſide would be augmented in the ſame proportion, ſo as to counterpoiſe each other exactly, in every ſituation, until the uppermoſt chain was raiſed from the ground. After which it would increaſe its weight no more: and, of courſe, would then give the under coffer that preponderance which is neceſſary for preſerving the machine ſteady. The under coffer, when it reached its loweſt poſition, would touch the bottom on its edges, which would then ſupport it, and keep every thing in the ſame poſition, till it was made lighter for the purpoſe of aſcending.

"What conſtitutes one particular excellence of the apparatus here propoſed is, that it is not only unlimited as to the extent of the riſe or depreſſion of which it is ſuſceptible (for it would not require the expenditure of one drop more water to lower it 100 feet than one foot); but it would alſo be eaſy ſo to augment the number of pulleys at any one place as to admit of two, three, four, or any greater number of boats being lowered or elevated at the ſame time; ſo that let the ſucceſſion of boats on ſuch a canal be nearly as rapid as that of carriages upon a highway, none of of them need be delayed one moment to wait an opportunity of paſſing: a thing that is totally impracticable where water-locks are employed; for the intercourſe, on every canal conſtructed with water-locks, is neceſſarily limited to a certain degree, beyond which it is impoſſible to force it.

"For example: ſuppoſe a hundred boats are following each other, in ſuch a rapid ſucceſſion as to be only half a minute behind each other: By the apparatus here propoſed, they would all be elevated preciſely as they came; in the other, let it be ſuppoſed that the lock is ſo well conſtructed as that it takes no more than five minutes to cloſe and open it; that is, ten minutes in the whole to each boat (for the lock, being once filled, muſt be again emptied before it can receive another in the ſame direction): at this rate, ſix boats only could be paſſed in an hour, and of courſe it would take ſixteen hours and forty minutes to paſs the whole hundred; and as the laſt boat would reach the lock in the ſpace of fifty minutes after the firſt, it would be detained fifteen hours and fifty minutes before its turn would come to be raiſed. This is an immenſe detention; but if a ſucceſſion of boats, at the ſame rate, were to follow continually, they never could paſs at all. In ſhort, in a canal conſtructed with water-locks, not more than ſix boats, on an average, can be paſſed in an hour, ſo that beyond that extent all commerce muſt be ſtopped; but, on the plan here propoſed, ſixty, or ſix hundred, might be paſſed in an hour, if neceſſary, ſo as to occaſion no ſort of interruption whatever. Theſe are advantages of a very important nature, and ought not to be overlooked in a commercial country.

Canals.

"This apparatus might be employed for innumerable other uſes as a moving power, which it would be foreign to our preſent purpoſe here to ſpecify. Nor does its power admit of any limitation, but that of the ſtrength of the chain, and of the coffers which are to ſupport the weights. All the other parts admit of being made ſo immoveably firm as to be capable of ſupporting almoſt any aſſignable weight.

"I will not enlarge on the benefits that may be derived from this very ſimple apparatus: its cheapneſs, when compared with any other mode of raiſing and lowering veſſels that has ever yet been practiſed, is very obvious; the waſte of water it would occaſion is next to nothing; and when it is conſidered that a boat might be raiſed or lowered fifty feet nearly with the ſame eaſe as five, it is evident that the interruptions which ariſe from frequent locks would be avoided, and an immenſe ſaving be made in the original expence of the canal, and in the annual repairs.

"It is alſo evident, that an apparatus, on the ſame principle, might be eaſily applied for raiſing coals or metals from a great depth in mines, wherever a very ſmall ſtream of water could be commanded, and where the mine was level-free."

It is almoſt needleſs to ſpend time in enumerating the many advantages which neceſſarily reſult from artificial navigations. Their utility is now ſo apparent, that moſt nations in Europe give the higheſt encouragement to undertakings of this kind wherever they are practicable. The advantages of navigable canals did not eſcape the obſervation of the ancients. From the moſt early accounts of ſociety we read of attempts to cut through large iſthmuſes, in order to make a communication by water, either betwixt different nations, or diſtant parts of the ſame nation, where land-carriage was long and expenſive. Herodotus relates, that the Cnidians, a people of Caria in Aſia Minor, deſigned to cut the iſthmus which joins that peninſula to the continent; but were ſuperſtitious enough to give up the undertaking, becauſe they were interdicted by an oracle. Several kings of Egypt attempted to join the Red ſea to the Mediterranean by a canal. It was begun by Necos the ſon of Pſammeticus, and completed by Ptolemy II. After his reign it was neglected, till it was opened in 635 under the caliphate of Omar, but was again allowed to fall into diſrepair; ſo that it is now difficult to diſcover any traces of it. Both the Greeks and Romans intended to make a canal acroſs the iſthmus of Corinth, which joins the Morea and Achaia, in order to make a navigable paſſage by the Ionian ſea into the Archipelago. Demetrius,

Canals. metrius, Julius Cæſar, Caligula, and Nero, made ſeveral unſucceſsful efforts to open this paſſage. But, as the ancients were entirely ignorant of the uſe of water-locks, their whole attention was employed in making level cuts, which is probably the principal reaſon why they ſo often failed in their attempts. Charlemagne formed a deſign of joining the Rhine and the Danube, in order to make a communication between the ocean and the Black ſea, by a canal from the river Almutz which diſcharges itſelf into the Danube, to the Reditz, which falls into the Main, and this laſt falls into the Rhine near Mayence; for this purpoſe he employed a prodigious number of workmen; but he met with ſo many obſtacles from different quarters, that he was obliged to give up the attempt.

The French at preſent have many fine canals: that of Briare was begun under Henry IV. and finiſhed under the direction of Cardinal Richelieu in the reign of Louis XIII. This canal makes a communication betwixt the Loire and the Seine by the river Loing. It extends 11 French great leagues from Briare to Montargis. It enters the Loire a little above Briare, and terminates in the Loing at Cepoi. There are 42 locks on this canal.

The canal of Orleans, for making another communication between the Seine and the Loire, was begun in 1675, and finiſhed by Philip of Orleans, regent of France, during the minority of Louis XV. and is furniſhed with 20 locks. It goes by the name of the *canal of Orleans;* but it begins at the village of Combleux. which is a ſhort French league from the town of Orleans.

But the greateſt and moſt uſeful work of this kind is the junction of the ocean with the Mediterranean by the canal of Languedoc. It was propoſed in the reigns of Francis I. and Henry IV. and was undertaken and finiſhed under Louis XIV. It begins with a large reſervoir 4000 paces in circumference, and 24 feet deep, which receives many ſprings from the mountain Noire. This canal is about 64 leagues in length, is ſupplied by a number of rivulets, and is furniſhed with 104 locks, of about eight feet riſe each. In ſome places it paſſes over bridges of vaſt height; and in others it cuts through ſolid rocks for 1000 paces. At one end it joins the river Garonne near Thouloufe, and terminates at the other in the lake Tau, which extends to the port of Cette. It was planned by Francis Riquet in the 1666, and finiſhed before his death, which happened in the 1680.

In the Dutch, Auſtrian, and French Netherlands, there is a very great number of canals; that from Bruges to Oſtend carries veſſels of 200 tons.

The Chineſe have alſo a great number of canals; that which runs from Canton to Pekin extends about 825 miles in length, and was executed about 800 years ago.

It would be an endleſs taſk to deſcribe the numberleſs canals in Holland, Ruſſia, Germany, &c. We ſhall therefore confine ourſelves to ſome of the more important in our own country.

As the promoting of commerce is the principal intention of making canals, it is natural to expect that their frequency in any nation ſhould bear ſome proportion to the trade carried on in it, providing the ſituation of the country will admit of them. The preſent ſtate of England and Scotland confirms this obſervation. Though the Romans made a canal between the Nyne, a little below Peterborough, and the Witham, three miles below Lincoln, which is now almoſt entirely filled up, yet it is not long ſince canals were revived in England. They are now however become very numerous, particularly in the counties of York, Lincoln, and Cheſhire. Moſt of the counties betwixt the mouth of the Thames and the Briſtol channel are connected together either by natural or artificial navigations; thoſe upon the Thames and Iſis reaching within about 20 miles of thoſe upon the Severn. The duke of Bridgewater's canal in Cheſhire runs 27 miles on a perfect level; but at Barton it is carried by a very high aqueduct bridge over the Irwell, a navigable river; ſo that it is common for veſſels to be paſſing at the ſame time both under and above the bridge. It is likewiſe cut ſome miles into the hills, where the duke's coal-mines are wrought. Canals.

A navigable canal betwixt the Forth and Clyde in Scotland, and which divides the kingdom in two parts, was firſt thought of by Charles II. for tranſports and ſmall ſhips of war; the expence of which was to have been 500,000l. a ſum far beyond the abilities of his reign. It was again projected in the year 1722, and a ſurvey made; but nothing more done till 1761, when the then Lord Napier, at his own expence, cauſed a ſurvey, plan, and eſtimate on a ſmall ſcale to be made. In 1764, the truſtees for fiſheries, &c. in Scotland cauſed make another ſurvey, plan, and eſtimate of a canal five feet deep, which was to coſt 79,000l. In 1766, a ſubſcription was obtained by a number of the moſt reſpectable merchants in Glaſgow, for making a canal four feet deep and twenty four feet in breadth; but when the bill was nearly obtained in parliament, it was given up on account of the ſmallneſs of the ſcale, and a new ſubſcription ſet on foot for a canal ſeven feet deep, eſtimated at 150,000l. This obtained the ſanction of parliament; and the work was begun in 1768 by Mr Smeaton the engineer. The extreme length of the canal from the Forth to the Clyde is 35 miles, beginning at the mouth of the Carron, and ending at Dalmuir Burnfoot on the Clyde, ſix miles below Glaſgow, riſing and falling 160 feet by means of 39 locks, 20 on the eaſt ſide of the ſummit, and 19 on the weſt, as the tide does not ebb ſo low in Clyde as in the Forth by nine feet. Veſſels drawing eight feet water, and not exceeding nineteen feet beam and ſeventy-three feet in length, paſs with eaſe, the canal having afterwards been deepened to upwards of eight feet. The whole enterpriſe diſplays the art of man in a high degree. The carrying the canal through moſs, quick-ſand, gravel, and rocks, up precipices and over valleys, was attended with inconceivable difficulties. There are eighteen draw-bridges and fifteen aqueduct bridges of note, beſides ſmall ones and tunnels. In the firſt three miles there are only ſix locks; but in the fourth mile there are no leſs than ten locks, and a very fine aqueduct bridge over the great road to the weſt of Falkirk. In the next ſix miles there are only four locks which carry you to the ſummit. The canal then runs eighteen miles on a level, and terminates by one branch about a mile from Glaſgow. In this courſe, for a conſiderable way, the ground is banked about twenty feet high, and the water is ſixteen feet deep,

Canals.

and two miles of it is made through a deep moſs. At Kirkintilloch, the canal is carried over the water of Logie on an aqueduct arch of ninety feet broad. This arch was thrown over in three ſtretches, having only a centre of thirty feet, which was ſhifted on ſmall rollers from one ſtretch to another; a thing new, and never attempted before with an arch of this ſize; yet the joinings are as fairly equal as any other part, and admired as a very fine piece of maſonry. On each ſide there is a very conſiderable banking over the valley. This work was carried on till it came within ſix miles of its junction with the Clyde; when the ſubſcription and a ſubſequent loan being exhauſted, the work was ſtopt in 1775. The city of Glaſgow, however by means of a collateral branch, opened a communication with the Forth, which has produced a revenue of about 6000l. annually; and, in order to finiſh the remaining ſix miles, the government in 1784 gave 50,000l. out of the forfeited eſtates, the dividends ariſing from this ſum to be applied to making and repairing roads in the Highlands of Scotland. The work was accordingly reſumed; and by contract, under a high penalty, was to be entirely completed in November 1789. The aqueduct bridge over the Kelvin, which is ſuppoſed the greateſt of the kind in the world, conſiſts of four arches, and carries the canal over a valley 65 feet high, and 420 in length, exhibiting a very ſingular effort of human ingenuity and labour. To ſupply the canal with water was of itſelf a very great work. There is one reſervoir of 50 acres 24 feet deep, and another of 70 acres 22 feet deep, into which many rivers and ſprings terminate, which it is thought will afford a ſufficient ſupply of water at all times. This whole undertaking when finiſhed coſt about 200,000l. It is the greateſt of the kind in Britain, and of great national utility; though it is to be regretted that it had not been executed on a ſtill larger ſcale, the locks being too ſhort for tranſporting large maſts.

This canal was completed in July 1790. On the 28th of this month, a track barge belonging to the company of proprietors ſailed from the baſon, near the city of Glaſgow to Bowling bay, where the canal joins the river Clyde. The committee of management, accompanied by the magiſtrates of Glaſgow, were the firſt voyagers on the new canal. On the arrival of the veſſel at Bowling bay, after deſcending from the laſt lock into the Clyde, the ceremony of the junction of the Forth and Clyde was performed by the chairman of the committee, who, with the aſſiſtance of the chief engineer, diſcharged into the river Clyde, a hogſhead of water taken up from the river Forth, as a ſymbol of joining the weſtern and eaſtern ſeas together.

About the year 1801, a canal was finiſhed between Loch Gilp to Loch Crinan in Argyleſhire. The diſtance is about nine miles. This canal, which is called the Crinan canal, is intended to accommodate the trade of the Weſtern Iſlands and fiſheries. The veſſels employed in this trade will, by means of this canal, avoid the circuitous and dangerous navigation round the Mull of Cantire.

Another canal was begun laſt year (1803), which is intended to open a communication between the Weſtern ſea, and the Murray frith, by the lochs or arms of the ſea, which ſtretch inland on the weſt ſide, and by Loch Neſs on the eaſt.

Canal, in *Anatomy*, a duct or paſſage through which any of the juices flow.

Cananor || Canary.

CANANOR, a large maritime town of Aſia, on the coaſt of Malabar, in a kingdom of the ſame name, with a very large and ſafe harbour. It formerly belonged to the Portugueſe, and had a ſtrong fort to guard it; but in 1683, the Dutch, together with the natives, drove them away; and after they became maſters of the town, enlarged the fortifications. They have but a very ſmall trade; but there is a town at the bottom of the bay independent of the Dutch, whoſe prince can bring 20,000 men into the field. The Dutch fort is large, and the governor's lodgings are at a good diſtance from the gate; ſo that, when there was a ſkirmiſh between the factory and the natives, he knew nothing of it till it was over. E. Long. 78. 10. N. Lat. 12. 0.

Cananor, a ſmall kingdom of Aſia, on the coaſt of Malabar, whoſe king can raiſe a conſiderable army. The natives are generally Mahometans; and the country produces pepper, cardamoms, ginger, mirobolans, and tamarinds, in which they drive a conſiderable trade.

CANARA, a kingdom of Aſia, on the coaſt of Malabar. The inhabitants are Gentoos, or Pagans; and there is a pagod or temple, called *Ramtrut*, which is viſited every year by a great number of pilgrims. Here the cuſtom of burning the wives with their huſbands had its beginning, and is practiſed to this day. The country is generally governed by a woman, who keeps her court at a town called *Baydor*, two days journey from the ſea. She may marry whom ſhe pleaſes; and is not obliged to burn with her huſband, like her female ſubjects. They are ſo good obſervers of their laws, that a robbery or murder is ſcarce ever heard of among them. The Canarans have forts built of earth along the coaſt, which are garriſoned with 200 or 300 ſoldiers, to guard againſt the robberies of their neighbours. The lower grounds yield every year two crops of corn or rice; and the higher produce pepper, betel-nuts, ſanders wood, iron, and ſteel. The Portugueſe clergy here live very looſely, and make no ſcruple of procuring women for ſtrangers.

CANARIA, in *Ancient Geography*, one of the Fortunate Iſlands, a proof that theſe were what are now called the *Canaries*. Canaria had its name from its abounding with dogs of an enormous ſize, two of which were brought to Juba king of Mauritania. See the following article.

Canaria, or the *Grand Canary*, an iſland in the Atlantic ocean, about 180 miles from the coaſt of Africa. It is about 100 miles in circumference, and 33 in diameter. It is a fruitful iſland, and famous for the wine that bears its name. It alſo abounds with apples, melons, oranges, citrons, pomegranates, figs, olives, peaches, and plantains. The fir and palm trees are the moſt common. The towns are, Canary the capital, Gualdera, and Geria.

CANARY, or Cividad de Palmas, is the capital of the iſland of Canaria, with an indifferent caſtle, and a biſhop's ſee. It has alſo a court of inquiſition, and the ſupreme council of the reſt of the Canary-iſlands; as alſo four convents, two for men and two for women. The town is about three miles in compaſs, and contains

Canary. contains 12,000 inhabitants. The houſes are only one ſtory high, and flat at the top; but they are well built. The cathedral is a handſome ſtructure. W. Long. 15. 20. N. Lat. 28. 4.

Canary Iſlands, are ſituated in the Atlantic ocean, over againſt the empire of Morocco in Africa. They were formerly called the *Fortunate Iſlands*, on account of the temperate healthy air, and excellent fruits. The land is very fruitful, for both wheat and barley produce 130 for one. The cattle thrive well, and the woods are full of all ſorts of game. The Canary ſinging birds are well known all over Europe. There are here ſugar-canes in great abundance; but the Spaniards firſt planted vines here, from whence we have the wine called *Canary* or *Sack*.

Theſe iſlands were not entirely unknown to the ancients; but they were a long while forgot, till John de Betencourt diſcovered them in 1402. It is ſaid they were firſt inhabited by the Phœnicians, or Carthaginians, but on no certain foundation; nor could the inhabitants themſelves tell from whence they were derived; on the contrary, they did not know there was any other country in the world. Their language, manners, and cuſtoms, had no reſemblance to thoſe of their neighbours. However, they were like the people on the coaſt of Barbary in complexion. They had no iron. After the diſcovery, the Spaniards ſoon got poſſeſſion of them all, under whoſe dominion they are to this day, except Madeira, which belongs to the Portugueſe. The inhabitants are chiefly Spaniards; though there are ſome of the firſt people remaining, whom they call *Guanches*, who are ſomewhat civilized by their intercourſe with the Spaniards. They are a hardy, active, bold people, and live on the mountains. Their chief food is goat's milk. Their complexion is tawny, and their noſes flat. The Spaniſh veſſels, when they ſail for the Weſt Indies, always rendezvous at theſe iſlands, going and coming. Their number is 12. 1. Alegranza; 2. Canaria; 3. Ferro; 4. Fuerteventura; 5. Gomera; 6. Gratioſa; 7. Lancerotta; 8. Madeira; 9. Palma; 10. Rocca; 11. Salvages; 12. Teneriff. Weſt longitude from 12 to 21. north latitude from 27. 30. to 29. 30.

Canary-Bird. See Fringilla. Theſe birds are much admired for their ſinging, and take their name from the place from whence they originally came, viz. the Canary-iſlands; but of late years there is a ſort of birds brought from Germany, and eſpecially from Tirol, and therefore called *German birds*, which are much better than the others; though both are ſuppoſed to have originally come from the ſame place. The cocks never grow fat, and by ſome country people cannot be diſtinguiſhed from common green-birds; though the Canary-birds are much luſtier, have a longer tail, and differ much in the heaving of the paſſages of the throat when they ſing. Theſe birds being ſo much eſteemed for their ſong, are ſometimes ſold at a high price, according to the goodneſs and excellency of their notes; ſo that it will always be adviſable to hear one ſing before he is bought. In order to know whether he is in good health, take him out of the ſtore-cage, and put him in a clean cage by himſelf; if he ſtand up boldly, without crouching or ſhrinking in his feathers, look with a briſk eye, and is not ſubject to clap his head under his wing, it is a ſign that he is in good health; but the greateſt matter is to obſerve his dunging: if he Canary. bolts his tail like a nightingale after he has dunged, it is a ſign he is not in good health, or at leaſt that he will ſoon be ſick; but if his dung be very thin like water, or of a ſlimy white without any blackneſs in it, it is a ſign of approaching death. When in perfect health, his dung lies round and hard, with a fine white on the outſide, dark within, and dries quickly; though a ſeed-bird ſeldom dungs ſo hard, unleſs he is very young.

Canary-birds are ſubject to many diſeaſes, particularly impoſthumes which affect the head, cauſe them to fall ſuddenly from the perch, and die in a ſhort time, if not ſpeedily cured. The moſt approved medicine is an ointment made of freſh butter and capon's greaſe melted together. With this the top of the bird's head is to be anointed for two or three days, and it will diſſolve the impoſthume: but if the medicine has been too long delayed, then, after three or four times anointing, ſee whether the place of his head be ſoft; and if ſo, open it gently, and let out the matter, which will be like the yolk of an egg; when this is done, anoint the place, and the bird will be cured. At the ſame time he muſt have figs with his other food, and in his water a ſlice or two of liquorice, with white ſugar-candy.

Canary-birds are diſtinguiſhed by different names at different times and ages: ſuch as are about three years old are called *runts*; thoſe above two are named *eriſſs*; thoſe of the firſt year under the care of the old ones, are termed *branchers*; thoſe that are new-flown, and cannot feed themſelves, *puſhers*; and thoſe brought up by hand, *neſtlings*.

The Canary-birds may be bred with us; and, if treated with proper care, they will become as vigorous and healthful as in the country from whence they have their name. The cages in which theſe birds are kept are to be made either of walnut-tree or oak, with bars of wire; becauſe theſe, being woods of ſtrength, do not require to be uſed in large pieces. The common ſhape of cages, which is cylindric, is very improper for theſe birds; for this allows little room to walk, and without that the birds uſually become melancholy. The moſt proper of all ſhapes is the high and long, but narrow.

If theſe birds eat too much, they grow over-fat, loſe their ſhape, and their ſinging is ſpoiled; or at leaſt they become ſo idle, that they will ſcarce ever ſing. In this caſe their victuals are to be given them in a much ſmaller quantity, and they will by this means be recovered by degrees to all their beauty, and will ſing as at firſt.

At the time that they are about to build their neſts, there muſt be put into their cages ſome hay, dried thoroughly in the ſun: with this muſt be mixed ſome moſs dried in the ſame manner, and ſome ſtag's hair; and great care is to be taken of breeding the young, in the article of food. As ſoon as the young birds are eight days old, or ſomewhat more, and are able to eat and pick up food of themſelves, they are to be taken out of the cage in which they were hatched, and each put ſeparately into another cage, and hung up in a room where it may never have an opportunity of hearing the voice of any other bird. After they have been kept thus about eight days, they are to be excited

Canary, Cancalle.

cited to ſing by a bird-pipe; but this is not to be blowed too much, or in too ſhrill a manner, leſt they ſing themſelves to death.

For the firſt fifteen days the cages are to be covered with a black cloth, and for the fifteen days following with a green one. Five leſſons in a day from the pipe are ſufficient for theſe young creatures; and they muſt not be diſturbed with ſeveral ſounds at the ſame time, leſt they confound and puzzle them: two leſſons ſhould be given them early in the morning, one about the middle of the day, and two or more at night.

The genius and temper of the ſeveral birds of this kind are very different. The males are almoſt always melancholy, and will not ſing unleſs they are excited to it by hearing others continually ſinging about them. The male bird of this kind will often kill the female put to him for breeding; and when there are ſeveral females together with the males, they will often do the ſame to one another from jealouſy. It is therefore not eaſy to manage the article of their breeding well in this particular, unleſs in this manner: let two female birds be put into one cage, and when they have lived together ſome time, they will have contracted a ſort of love for one another, which will not eaſily be diſſolved. Put a male bird into the cage with theſe two, and every thing will go well; their friendſhip will keep them from quarrelling about his favours, and from danger of his miſchievous diſpoſition; for if he attacks one of them, in order to kill her, the other will immediately take her part; and after a few of theſe battles, the male will find that they are together an overmatch for him at fighting, and will then diſtribute his favours to them, and there will not fail of being a young breed or two, which are to be taken away from their parents, and educated as before directed. Some males watch the time of the female's laying, and devour the eggs as faſt as ſhe depoſites them; and others take the young ones in their beak as ſoon as hatched, and cruſh them to death againſt the ſides of the cage, or ſome other way deſtroy them. When a male has been known once to have been guilty of this, he is to be ſhut up in a ſmall cage, in the middle of the large one in which the female is breeding her young, and thus he will often comfort her with ſinging all day long, while ſhe ſits upon the eggs or takes care of the young ones; and when the time of taking away, to put them into ſeparate cages, is come, the male is to be let out, and he will always after this live in friendſhip with the female.

If the male become ſick during the time of the female's ſitting or bringing up her young, he muſt be removed immediately, and only brought to the ſide of her cage at certain times, that ſhe may ſee him, till he is perfectly cured; and then he is to be ſhut up again in his cage in the middle.

Canary-birds are various in their notes; ſome having a ſweet ſong, others a lowiſh note, others a long ſong, which is beſt, as having the greateſt variety of notes; but they ſing chiefly either the titlark or nightingale notes. See *Song of Birds*.

CANCALLE, a town of France, in Upper Brittany, by the ſea-ſide, where there is a road. Here the Britiſh landed in 1758, in their way to St Maloes, where they burnt a great number of ſhips in the harbour, and then retired without loſs. This town was in their power; but they acted like generous enemies, and did no hurt to this nor any other on the coaſt. W. Long. 0. 13. N. Lat. 48. 41.

Cancelier ‖ Candahar.

CANCELIER, in falconry, is when a light brown hawk, in her ſtooping, turns two or three times upon the wing, to recover herſelf before ſhe ſeizes.

CANCELLI, a term uſed to denote lattice windows, or thoſe made of croſs bars diſpoſed latticewiſe; it is alſo uſed for rails or balluſters incloſing the communion-table, a court of juſtice, or the like, and for the network in the inſide of hollow bones.

CANCELLING, in the civil law, an act whereby a perſon conſents that ſome former deed be rendered null and void. This is otherwiſe called *reſciſion*. The word comes from the Latin *cancel'are*, to encompaſs or pale a thing round. In the proper ſenſe of the word, *to cancel*, is to deface an obligation, by paſſing the pen from top to bottom, or acroſs it; which makes a kind of chequer lattice, which the Latins call *cancelli*.

CANCER, in *Zoology*, a genus of inſects belonging to the order of inſecta aptera. This genus includes the lobſter, the crab, the prawn, the ſhrimp, and the crawfiſh. See Entomology *Index*.

Cancer, in *Medicine*, a roundiſh, unequal, hard, and livid tumour, generally ſeated in the glandulous parts of the body, ſuppoſed to be ſo called, becauſe it appears at length with turgid veins ſhooting out from it, ſo as to reſemble, as it is thought, the figure of a crab-fiſh, or others ſay, becauſe, like that fiſh, where it has once got, it is ſcarce poſſible to drive it away. See Medicine *Index*.

Cancer, in *Aſtronomy*, one of the twelve ſigns, repreſented on the globe in the form of a crab, and thus marked (♋) in books. It is the fourth conſtellation in the ſtarry zodiac, and that from which one quadrant of the ecliptic takes its denomination. The reaſon generally aſſigned for its name as well as figure, is a ſuppoſed reſemblance which the ſun's motion in this ſign bears to the crab-fiſh. As the latter walks backwards, ſo the former, in this part of his courſe, begins to go backwards, or recede from us: though the diſpoſition of ſtars in this ſign is by others ſuppoſed to have given the firſt hint to the repreſentation of a crab.

Tropic of Cancer, in *Aſtronomy*, a leſſer circle of the ſphere parallel to the equator, and paſſing through the beginning of the ſign Cancer.

CANCHERIZANTE, or Cancherizato, in the Italian muſic, a term ſignifying a piece of muſic that begins at the end, being the retrograde motion from the end of a ſong, &c. to the beginning.

CANCROMA, or Boat-bill. See Ornithology *Index*.

CANDAHAR, a province of Perſia, bounded on the north by the province of Balk; on the eaſt, by that of Cabul; on the ſouth, by Buchor and Sableſtan; and on the weſt, by Sigeſtan. There have been bloody wars between the Indians and Perſians on account of this province; but in 1650 it fell to the Perſians. The inhabitants are known by the name of *Aghuans* or *Afghans*, who have often endeavoured to throw off the yoke. But, in 1737, they were ſeverely puniſhed for ſuch an attempt. See Persia.

Candahar, the capital of the above province, is ſeated on a mountain; and being a place of great trade,

Candaules || Candia.

trade, has a conſiderable fortreſs. The caravans that travel from Perſia and the parts about the Caſpian ſea to the Eaſt Indies, chooſe to paſs through Candahar, becauſe there is no danger of being robbed on this road, and proviſions are very reaſonable. The religion is Mahometaniſm, but there are many Banians and Guebres. E. Long. 67. 5. N. Lat. 33. 0.

CANDAULES, the laſt king of Lydia, of the family of the Heraclides. See LYDIA.

CANDELARES, (from *candela*, a candle), the name of an order in the former editions of Linnæus's Fragments of a natural method, conſiſting of theſe three genera, *rhizophora*, *nyſſa* and *mimuſops*. They are removed, in the latter editions, into the order HOLORACEÆ.

CANDIA, the modern name of the iſland of Crete (ſee CRETE). The word is a variation of *Khunda*, which was originally the Arabian name of the metropolis only, but in time came to be applied to the whole iſland.

Candia came into the poſſeſſion of the Venetians by purchaſe in the year 1194, as related under the article CRETE; and ſoon began to flouriſh under the laws of that wiſe republic. The inhabitants, living under the protection of a moderate government, and being encouraged by their maſters, engaged in commerce and agriculture. The Venetian commandants readily afforded to thoſe travellers who viſited the iſland, that aſſiſtance which is neceſſary to enable them te extend and improve uſeful knowledge. Belon, the naturaliſt, is laviſh in praiſe of their good offices, and deſcribes, in an intereſting manner, the flouriſhing ſtate of that part of the iſland which he viſited.

The ſeat of government was eſtabliſhed at Candia. The magiſtrates and officers, who compoſed the council, reſided there. The proviſor-general was preſident. He poſſeſſed the chief authority; and his power extended over the whole principality. It continued in the poſſeſſion of the Venetians for five centuries and a half. Cornaro held the chief command at the time when it was threatened with a ſtorm, on the ſide of Conſtantinople. The Turks, for the ſpace of a year, had been employed in preparing a vaſt armament. They deceived the Venetian, by aſſuring him that it was intended againſt Malta. In the year 1645, in the midſt of a ſolemn peace, they appeared unexpectedly before Crete with a fleet of 400 ſail, having on board 60,000 land forces, under the command of four pachas. The emperor Ibrahim, under whom this expedition was undertaken, had no fair pretext to offer in juſtification of his enterprize. He made uſe of all that perfidy which characteriſes the people of the eaſt, to impoſe on the Venetian ſenate. He loaded their ambaſſador with preſents, directed his fleet to bear for Cape Matapan, as if they had been going beyond the Archipelago; and cauſed the governors of Tina and Cerigna to be ſolemnly aſſured, that the republic had nothing to fear for her poſſeſſions. At the very inſtant when he was making thoſe aſſurances, his naval armament entered the gulf of Canea; and, paſſing between that city and St Theodore, anchored at the mouth of Platania.

The Venetians, not expecting this ſudden attack, had made no preparations to repel it. The Turks landed without oppoſition. The iſle of St Theodore is but a league and an half from Canea. It is only three quarters of a league in compaſs. The Venetians had erected two forts there; one of which, ſtanding on the ſummit of the higheſt eminence, on the coaſt of that little iſle, was called Turluru; the other, on a lower ſituation, was named St Theodore. It was an important object to the Muſſulmans to make themſelves maſters of that rock, which might annoy their ſhips. They immediately attacked it with ardour. The firſt of thoſe fortreſſes, being deſtitute of ſoldiers and cannon, was taken without ſtriking a blow. The garriſon of the other conſiſted of no more than 60 men. They made a gallant defence, and ſtood out till the laſt extremity; and when the Turks at laſt prevailed, their number was diminiſhed to ten, whom the captain-pacha cruelly cauſed to be beheaded. Candia.

Being now maſters of that important poſt, as well as of Lazaret, an elevated rock, ſtanding about half a league from Canea, the Turks inveſted the city by ſea and land. General Cornaro was ſtruck, as with a thunder-clap, when he learned the deſcent of the enemy. In the whole iſland there were no more than a body of 3500 infantry, and a ſmall number of cavalry. The beſieged city was defended only by 1000 regular troops, and a few citizens, who were able to bear arms. He made haſte to give the republic notice of his diſtreſs; and poſted himſelf off the road, that he might the more readily ſuccour the beſieged city. He threw a body of 250 men into the town, before the lines of the enemy were completed. He afterwards made ſeveral attempts to ſtrengthen the beſieged with other reinforcements; but in vain. The Turks had advanced in bodies cloſe to the town, had carried a half-moon battery, which covered the gate of Retimo; and were battering the walls night and day with their numerous artillery. The beſieged defended themſelves with reſolute valour, and the ſmalleſt advantage which the beſiegers gained coſt them dear. General Cornaro made an attempt to arm the Greeks, particularly the Spachiots, who boaſted loudly of their valour. He formed a battalion of theſe. But the æra of their valour was long paſt. When they beheld the enemy, and heard the thunder of the cannon, they took to flight; not one of them would ſtand fire.

When the ſenate of Venice were deliberating on the means to be uſed for relieving Canea, and endeavouring to equip a fleet, the Mahometan generals were ſacrificing the lives of their ſoldiers to bring their enterpriſe to a glorious termination. In different engagements they had already loſt 20,000 warriors; but, deſcending into the ditches, they had undermined the walls, and blown up the moſt impregnable forts with exploſions of powder. They ſprung one of thoſe mines beneath the baſtion of St Demetri. It overturned a conſiderable part of the wall, which cruſhed all the defenders of the baſtion. That inſtant the beſiegers ſprung up with their ſabres in their hands, and taking advantage of the general conſternation of the beſieged on that quarter, made themſelves maſters of the poſt. The beſieged, recovering from their terror, attacked them with unequalled intrepidity. About 400 men aſſailed 2000 Turks already firmly poſted on the wall, and preſſed upon them with ſuch obſtinate and dauntleſs valour, that they killed a great number, and drove the reſt down into the ditch. In this extremity, every perſon

Candia. perſon in the city was in arms. The Greek monks took up muſkets; and the women, forgetting the delicacy of their ſex, appeared on the walls among the defenders, either ſupplying the men with ammunition and arms, or fighting themſelves; and ſeveral of thoſe daring heroines loſt their lives.

For 50 days the city held out againſt all the forces of the Turks. If, even at the end of that time, the Venetians had ſent a naval armament to its relief, the kingdom of Candia might have been ſaved. Doubtleſs, they were not ignorant of this well-known fact. The north wind blows ſtraight into the harbour of Canea. When it blows a little briſkly, the ſea rages. It is then impoſſible for any ſquadron of ſhips, however numerous, to form in line of battle in the harbour, and to meet an enemy. If the Venetians had ſet out from Cerigo with a fair wind, they might have reached Canea in five hours, and might have entered the harbour with full ſails, without being expoſed to one cannon-ſhot; while none of the Turkiſh ſhips would have dared to appear before them; or if they had ventured, muſt have been driven back on the ſhore, and daſhed in pieces among the rocks. But, inſtead of thus taking advantage of the natural circumſtances of the place, they ſent a few galleys, which, not daring to double Cape Spada, coaſted along the ſouthern ſhore of the iſland, and failed of accompliſhing the deſign of their expedition.

At laſt, the Caneans, deſpairing of relief from Venice, ſeeing three breaches made in their walls, through which the infidels might eaſily advance upon them, exhauſted with fatigue, and covered with wounds, and reduced to the number of 500 men, who were obliged to ſcatter themſelves round the walls, which were half a league in extent, and undermined in all quarters, demanded a parley, and offered to capitulate. They obtained very honourable conditions; and after a glorious defence of two months, which coſt the Turks 20,000 men, marched out of the city with the honours of war. Thoſe citizens, who did not chuſe to continue in the city, were permitted to remove; and the Ottomans, contrary to their uſual practice, faithfully obſerved their ſtipulations.

The Venetians, after the loſs of Canea, retired to Retimo. The captain-pacha laid ſiege to the citadel of the Sude, ſituated in the entrance of the bay, on a high rock, of about a quarter of a league in circumference. He raiſed earthen-batteries, and made an ineffectual attempt to level the ramparts. At laſt, deſpairing of taking it by aſſault, he left ſome forces to block it up from all communication, and advanced towards Retimo. That city, being unwalled, was defended by a citadel, ſtanding on an eminence which overlooks the harbour. General Cornaro had retired thither. At the approach of the enemy, he advanced from the city, and waited for them in the open field. In the action, inattentive to his own ſafety, he encouraged the ſoldiers, by fighting in the ranks. A glorious death was the reward of his valour; but his fall determined the fate of Retimo.

The Turks having landed additional forces on the iſland, they introduced the plague, which was almoſt a conſtant attendant on their armies. This dreadful peſt rapidly advanced, and, like a devouring fire, waſting all before it, deſtroyed moſt part of the inhabitants. The reſt, flying in terror before its ravages, eſcaped into the Venetian territories, and the iſland was left almoſt deſolate. Candia.

The ſiege of the capital commenced in 1646, and was protracted much longer than that of Troy. Till the year 1648, the Turks ſcarce gained any advantages before that city. They were often routed by the Venetians, and ſometimes compelled to retire to Retimo. At that period Ibrahim was ſolemnly depoſed, and his eldeſt ſon, at the age of nine years, was raiſed to the throne, under the name of Mahomet IV. Not ſatisfied with confining the ſultan to the horrors and obſcurity of a dungeon, the partizans of his ſon ſtrangled him on the 19th of Auguſt, in the ſame year. That young prince, who mounted the throne by the death of his father, was afterwards expelled from it, and condemned to paſs the remainder of his life in confinement.

In the year 1649, Uſſein Pacha, who blockaded Candia, receiving no ſupplies from the Porte, was compelled to raiſe the ſiege, and retreat to Canea. The Venetians were then on the ſea with a ſtrong ſquadron. They attacked the Turkiſh fleet in the bay of Smyrna, burnt 12 of their ſhips and two gallies, and killed 6000 of their men. Some time after, the Mahometans having found means to land an army on Candia, renewed the ſiege of the city, with greater vigour, and made themſelves maſters of an advanced fort that was very troubleſome to the beſieged; which obliged them to blow it up.

From the year 1650 till 1658, the Venetians, continuing maſters of the ſea, intercepted the Ottomans every year in the ſtraits of the Dardanelles, and fought them in four naval engagements; in which they defeated their numerous fleets, ſunk a number of their caravels, took others, and extended the terror of their arms even to the walls of Conſtantinople. That capital became a ſcene of tumult and diſorder. The Grand Signior, alarmed, and trembling for his ſafety, left the city with precipitation.

Such glorious ſucceſs revived the hopes of the Venetians, and depreſſed the courage of the Turks. They converted the ſiege of Candia into a blockade, and ſuffered conſiderable loſſes. The ſultan, in order to exclude the Venetian fleet from the Dardanelles, and to open to his own navy a free and ſafe paſſage, cauſed two fortreſſes to be built at the entrance of the ſtraits. He gave orders to the pacha of Canea to appear again before the walls of Candia, and to make every poſſible effort to gain the city. In the mean time, the republic of Venice, to improve the advantages which they had gained, made ſeveral attempts on Canea. In 1660, that city was about to ſurrender to their arms, when the pacha of Rhodes, haſtening to its relief, reinforced the defenders with a body of 2000 men. He happily doubled the extremity of Cape Melec, though within ſight of the Venetian fleet, which was becalmed off Cape Spada, and could not advance one fathom to oppoſe an enemy conſiderably weaker than themſelves.

Kiopruli, ſon and ſucceſſor to the viſir of that name, who had long been the ſupport of the Ottoman empire, knowing that the murmurs of the people againſt the long continuance of the ſiege of Candia were riſing to a height, and fearing a general revolt, which would

Candia. would be fatal to himſelf and his maſter, ſet out from Byzantium about the end of the year 1666 at the head of a formidable army. Having eſcaped the Venetian fleet, which was lying off Canea with a view to intercept him, he landed at *Palio Caſtro*, and formed his lines around Candia. Under his command were four pachas, and the flower of the Ottoman forces. Thoſe troops, being encouraged by the preſence and the promiſes of their chiefs, and ſupported by a great quantity of artillery, performed prodigies of valour. All the exterior forts were deſtroyed. Nothing now remained to the beſieged but the bare line of the walls, unprotected by fortreſſes; and theſe being battered by an inceſſant diſcharge of artillery, ſoon gave way on all quarters. Still, however, what poſterity may perhaps regard as incredible, the Caneans held out three years againſt all the force of the Ottoman empire. At laſt they were going to capitulate, when the hope of aſſiſtance from France reanimated their valour, and rendered them invincible. The expected ſuccours arrived on the 26th of June 1669. They were conducted by the duke of Noailles. Under his command were a great number of French noblemen, who came to make trial of their ſkill in arms againſt the Turks.

Next day after their arrival, the ardour of the French prompted them to make a general ſally. The duke of Beaufort, admiral of France, aſſumed the command of the forlorn hope. He was the firſt to advance againſt the Muſſulmans, and was followed by a numerous body of infantry and cavalry. They advanced furiouſly upon the enemy, attacked them within their trenches, forced the trenches, and would have compelled them to abandon their lines and artillery, had not an unforeſeen accident damped their courage. In the midſt of the engagement a magazine of powder was ſet on fire; the foremoſt of the combatants loſt their lives; the French ranks were broken; ſeveral of their leaders, among whom was the duke of Beaufort, diſappeared for ever; the ſoldiers fled in diſorder; and the duke of Noailles, with difficulty, effected a retreat within the walls of Candia. The French accuſed the Italians of having betrayed them; and on that pretext prepared to ſet off ſooner than the time agreed upon. No entreaties of the commandant could prevail with them to delay their departure; ſo they reimbarked. Their departure determined the fate of the city. There were now no more than five hundred men to defend it. Moroſini capitulated with Kiopruli, to whom he ſurrendered the kingdom of Crete, excepting only the Sude, Grabuſa, and Spina-Longua. The grand-viſir made his entrance into Candia on the 4th of October 1670, and ſtaid eight months in that city, inſpecting the reparation of its walls and fortreſſes.

The three fortreſſes left in the hands of the Venetians by the treaty of capitulation remained long after in their poſſeſſion. At laſt they were all taken, one after another. In ſhort, after a war of 30 years continuance, in the courſe of which more than 200,000 men fell in the iſland, and it was deluged with ſtreams of Chriſtian and Mahometan blood, Candia was entirely ſubdued by the Turks, in whoſe hands it ſtill continues.

Of the climate of Candia travellers ſpeak with rapture. The heat is never exceſſive; and in the plains violent cold is never felt. In the warmeſt days of ſummer the atmoſphere is cooled by breezes from the ſea. Winter properly begins here with December and ends with January; and during that ſhort period ſnow never falls on the lower grounds, and the ſurface of the water is rarely frozen over. Moſt frequently the weather is as fine then as it is in Britain at the beginning of June. Theſe two months have received the name of *winter*, becauſe in them there is a copious fall of rain, the ſky is obſcured with clouds, and the north winds blow violently; but the rains are favourable to agriculture, the winds chaſe the clouds towards the ſummits of the mountains, where a repoſitory is formed for thoſe waters which are to fertilize the fields; and the inhabitants of the plain ſuffer no inconvenience from theſe tranſient blaſts. In the month of February, the ground is overſpread with flowers and riſing crops. The reſt of the year is almoſt one continued fine day. The inhabitants of Crete never experience any of thoſe mortifying returns of piercing cold, which are ſo frequently felt in Britain and even more ſouthern countries; and which, ſucceeding ſuddenly after the cheriſhing heats of ſpring, nip the bloſſoming flowers, wither the open buds, deſtroy half the fruits of the year, and are fatal to delicate conſtitutions. The ſky is always unclouded and ſerene; the winds are mild and refreſhing breezes. The radiant ſun proceeds in ſmiling majeſty along the azure vault, and ripens the fruits on the lofty mountains, the riſing hills, and the plains. The nights are no leſs beautiful; their coolneſs is delicious. The atmoſphere not being overloaded with vapours, the ſky unfolds to the obſerver's view a countleſs profuſion of ſtars; thoſe numerous ſtars ſparkle with the moſt vivid rays, and ſtrew the azure vault in which they appear fixed, with gold, with diamonds, and with rubies. Nothing can be more magnificent than this ſight, and the Cretans enjoy it for ſix months in the year. Candia.

To the charms of the climate other advantages are joined which augment their value: There are ſcarce any moraſſes in the iſland; the waters here are never in a ſtate of ſtagnation; they flow in numberleſs ſtreams from the tops of the mountains, and form here and there large fountains or ſmall rivers that empty themſelves into the ſea; the elevated ſituation of their ſprings cauſes them to daſh down with ſuch rapidity, that they never loſe themſelves in pools or lakes; conſequently inſects cannot depoſit their eggs upon them, as they would be immediately hurried down into the ſea; and Crete is not infeſted like Egypt with thoſe clouds of inſects which ſwarm in the houſes, and whoſe ſting is inſufferably painful; nor is the atmoſphere here loaded with thoſe noxious vapours which riſe from marſhy grounds.

The mountains and hills are overſpread with various kinds of thyme, ſavoury, wild thyme, and with a multitude of odoriferous and balſamic plants; the rivulets which flow down the vallies are overhung with myrtles, laurel, and roſes; clumps of orange, citron, and almond trees, are plentifully ſcattered over the fields; the gardens are adorned with tufts of Arabian jaſmine. In ſpring, they are beſtrewed with beds of violets; ſome extenſive plains are arrayed in ſaffron; the cavities of the rocks are fringed with ſweet ſmelling dittany. In a word, from the hills, the vales, and the

Candia. plains, on all hands, there ariſe clouds of exquiſite perfumes, which embalm the air, and render it a luxury to breathe it.

As to the inhabitants, the Mahometan men are generally from five feet and a half to ſix feet tall. They bear a ſtrong reſemblance to ancient ſtatues; and it muſt have been after ſuch models that the ancient artiſts wrought. The women alſo are generally beautiful. Their dreſs does not reſtrain the growth of any part of their bodies, and their ſhape therefore aſſumes thoſe admirable proportions with which the hand of the Creator has graced his faireſt workmanſhip on earth. They are not all handſome or charming; but ſome of them are beautiful, particularly the Turkiſh ladies. In general, the Cretan women have a riſing throat, a neck gracefully rounded, black eyes ſparkling with animation, a ſmall mouth, a fine noſe, and cheeks delicately coloured with the freſh vermilion of health. But the oval of their form is different from that of Europeans, and the character of their beauty is peculiar to their own nation.

The quadrupeds belonging to the iſland are not of a ferocious temper. There are no lions, tigers, bears, wolves, foxes, or indeed any dangerous animal here. Wild goats are the only inhabitants of the foreſts that overſpread the lofty mountains; and theſe have nothing to fear but the ball of the hunter; hares inhabit the hills and the plain; ſheep graze in ſecurity on the thyme and the heath; they are folded every night, and the ſhepherd ſleeps ſoundly without being diſturbed with the fear that wild animals may invade and ravage his folds.

The Cretans are very happy in not being expoſed to the troubleſome bite of noxious inſects, the poiſon of ſerpents, or the rapacity of the wild beaſts of the deſert. The ancients believed that the iſland enjoyed theſe ſingular advantages, on account of its having been the birth-place of Jupiter. "The Cretans (ſays Ælian) celebrate in their ſongs the beneficence of Jupiter, and the favour which he conferred on their iſland, which was the place of his birth and education, by freeing it from every noxious animal, and even rendering it unfit for nouriſhing thoſe noxious animals that are introduced into it from foreign countries.

Dittany holds the firſt rank among the medicinal plants which are produced in Crete. The praiſes beſtowed on the virtues of this plant by the ancients are altogether extravagant; yet we perhaps treat the medicinal virtues of this plant with too much contempt. Its leaf is very balſamic, and its flower diffuſes around it a delicious odour. At preſent the inhabitants of the iſland apply it with ſucceſs on various occaſions. The leaf, when dried and taken in an infuſion with a little ſugar, makes a very pleaſant drink, of a finer flavour than tea. It is there an immediate cure for a weak ſtomach, and enables it to recover its tone after a bad digeſtion.

Diſeaſes are very rare in a country whoſe atmoſphere is exceedingly pure; and in Candia, epidemical diſeaſes are unknown. Fevers prevail here in ſummer, but are not dangerous; and the plague would be wholly unknown, had not the Turks deſtroyed the lazarets that were eſtabliſhed by the Venetians, for ſtrangers to do quarantine in. Since the period when theſe were demoliſhed, it is occaſionally introduced by ſhips from Smyrna and Conſtantinople. As no precautions are taken againſt it, it gains ground, and ſpreads over the iſland from one province to another; and as the colds and heats are never intemperate, it ſometimes continues its ravages for ſix months at a time. Candia.

This fine country is infeſted with a diſeaſe ſomewhat leſs dangerous than the plague, but whoſe ſymptoms are ſomewhat more hideous; that diſeaſe is the leproſy. In ancient times, Syria was the focus in which it raged with moſt fury: and from Syria it was carried into ſeveral of the iſlands of the Archipelago. It is infectious, and is inſtantaneouſly communicated by contact. The victims who are attacked by it, are driven from ſociety, and confined to little ruinous houſes on the high way. They are ſtrictly forbidden to leave theſe miſerable dwellings, or hold intercourſe with any perſon. Thoſe poor wretches have generally beſide their huts a ſmall garden producing pulſe, and feeding poultry; and with that ſupport, and what they obtain from paſſengers, they find means to drag out a painful life in circumſtances of ſhocking bodily diſtreſs. Their bloated ſkin is covered with a ſcaly cruſt, ſpeckled with red and white ſpots; which afflict them with intolerable itchings. A hoarſe and tremulous voice iſſues from the bottom of their breaſts. Their words are ſcarce articulated; becauſe their diſtemper inwardly preys upon the organs of ſpeech. Theſe frightful ſpectres gradually loſe the uſe of their limbs. They continue to breathe till ſuch time as the whole maſs of their blood is corrupted, and their bodies entirely in a ſtate of putrefaction: The rich are not attacked by this diſtemper: it confines itſelf to the poor, chiefly to the Greeks. But thoſe Greeks obſerve ſtrictly their four lents; and eat nothing during that time but ſalt fiſh, botorgo ſalted and ſmoked, pickled olives, and cheeſe. They drink plentifully of the hot and muddy wines of the iſland. The natural tendency of ſuch a regimen muſt be, to fire the blood, to thicken the fluid part of it, and thus at length to bring on a leproſy.

Candia is at preſent governed by three pachas, who reſide reſpectively at Candia, Canea, and Retimo. The firſt, who is always a pacha of three tails, may be conſidered as viceroy of the iſland. He enjoys more extenſive powers than the others. To him the inſpection of the forts and arſenals is intruſted. He nominates to ſuch military employments as fall vacant, as well as to the governments of the Sude, Grabuſa, Spina Longua, and Gira-petra. The governors of theſe forts are denominated *beys*. Each of them has a conſtable and three general officers under him: one of whom is commander of the artillery; another of the cavalry; and the third of the janiſſaries.

The council of the pacha conſiſts of a kyaia, who is the channel through which all orders are iſſued, and all favours beſtowed; an aga of the janiſſaries, colonel-general of the troops, who has the chief care of the regulation of the police; two topigi bachi; a defterdar, who is treaſurer-general for the imperial revenues; a keeper of the imperial treaſury; and the chief officers of the army. This government is entirely military, and the power of the pacha ſeraſquier is abſolute. The juſtice of his ſentences is never called in queſtion; they are inſtantly carried into execution.

The

Candia.

The people of the law are the mufti, who is the religious head, and the cadi. The firſt interprets thoſe laws which regard the diviſion of the patrimony among the children of a family, ſucceſſions, and marriages,—in a word, all that are contained in the Koran; and he alſo decides on every thing that relates to the ceremonies of the Muſſulman religion. The cadi cannot pronounce ſentence on affairs connected with theſe laws, without firſt taking the opinion of the mufti in writing, which is named *Faitfa*. It is his buſineſs to receive the declarations, complaints, and donations of private perſons; and to decide on ſuch differences as ariſe among them. The pacha is obliged to conſult thoſe judges when he puts a Turk legally to death; but the pacha, who is dignified with three tails, ſets himſelf above all laws, condemns to death, and ſees his ſentence executed, of his own proper authority. All the moſques have their itam, a kind of curate, whoſe duty is to perform the ſervice. There are ſchoolmaſters in the different quarters of the city. Theſe perſons are much reſpected in Turkey, and are honoured with the title of *effendi*.

The garriſon of Candia conſiſts of 46 companies, compoſing a military force of about ten thouſand men. All theſe forces do not reſide conſtantly in the city, but they may be muſtered in a very ſhort time. They are all regularly paid every three months, excepting the janiſſaries, none of whom but the officers receive pay. The different gradations of this military body do not depend on the pacha. The council of each company, conſiſting of veterans, and of officers in actual ſervice, has the power of naming to them. A perſon can occupy the ſame poſt for no longer than two years; but the poſt of *ſorbagi*, or captain, which is purchaſed at Conſtantinople, is held for life. The *ouſta*, or cook, is alſo continued in his employment as long as the company to which he belongs is ſatisfied with him. Each company has its almoner, denominated *imam*.

The garriſons of Canea and Retimo, formed on a ſimilar plan, are much leſs numerous. The firſt conſiſts of about 3000 men, the other of 500; but as all the male children of the Turks are enrolled among the janiſſaries as ſoon as born, the number of theſe troops might be greatly augmented in time of war; but, to ſay the truth, they are far from formidable. Moſt of them have never ſeen fire, nor are they ever exerciſed in military evolutions.

The pachas of Canea and Retimo are no leſs abſolute, within the bounds of their reſpective provinces, than the pacha of Candia. They enjoy the ſame privileges with him, and their council conſiſts of the ſame officers. Theſe governors chief object is to get rich as ſpeedily as poſſible; and in order to accompliſh that end, they practiſe all the arts and cruelties of oppreſſion, to ſqueeze money from the Greeks. In truth, thoſe poor wretches run to meet the chains with which they are loaded. Envy, which always preys upon them, continually prompts them to take up arms. If ſome one among them happen to enjoy a decent fortune, the reſt aſſiduouſly ſeek ſome pretence for accuſing him before the pacha, who takes advantage of theſe diſſenſions, to ſeize the property of both the parties. It is by no means aſtoniſhing, that under ſo barbarous a government, the number of the Greeks is daily diminiſhed.

There are ſcarcely in the iſland, 65,000 of whom pay the carach.	150,000 Greeks	Candia.
The Turks have not poſſeſſed the iſland for more than 120 years; yet, as they are not expoſed to the ſame oppreſſion, they have multiplied in it, and raiſed themſelves upon the ruin of the ancient inhabitants. Their number amounts to	200,000 Turks.	
The Jews, of whom there are not many in the iſland, amount only to	200.	
Total is	350,200 ſouls.	

This fertile country is in want of nothing but induſtrious huſbandmen, ſecure of enjoying the fruit of their labours. It might maintain four times its preſent number of inhabitants.

Antiquity has celebrated the iſland of Crete as containing 100 populous cities; and the induſtry of geographers has preſerved their names and ſituations. Many of theſe cities contained no fewer than 30,000 inhabitants;—and by reckoning them, on an average, at 6000 each, we ſhall in all probability be rather within than beyond the truth. This calculation gives for 100 cities 600,000

By allowing the ſame number as inhabitants of the towns, villages, and all the reſt of the iſland, 600,000

the whole number of the inhabitants of ancient Crete will amount to 1,200,000

This number cannot be exaggerated. When Candia was in the hands of the Venetians, it was reckoned to contain nine hundred fourſcore and ſixteen villages.

It appears, therefore, that when the iſland of Crete enjoyed the bleſſing of liberty, it maintained to the number of 849,800 more inhabitants than it does at preſent. But ſince thoſe happier times, ſhe has been deprived of her laws by the tyranny of the Romans; has groaned under the deſtructive ſway of the monarchs of the lower empire; has been expoſed for a period of 120 years to the ravages of the Arabians; has next paſſed under the dominion of the Venetians; and has at laſt been ſubjected to the deſpotiſm of the Turks, who have produced a dreadful depopulation in all the countries which have been ſubdued by their arms.

The Turks allow the Greeks the free exerciſe of their religion, but forbid them to repair their churches or monaſteries; and accordingly they cannot obtain permiſſion to repair their places of worſhip, or religious houſes, but by the powerful influence of gold. From this article the pachas derive very conſiderable ſums. They have 12 biſhops as formerly, the firſt of whom aſſumes the title of archbiſhop of Gortynia. He reſides at Candia; in which city the metropolitan church of the iſland ſtands. He is appointed by the patriarch of Conſtantinople; and has the right of nominating to all the other biſhoprics of the iſland; the names of which are, Gortynia, Cnoſſou, Mirabella, Hyera, Gira-petra, Arcadia, Cherroneſe, Lambis, Milopotamo, Retimo, Canea, Ciſamo. Theſe biſhoprics are nearly the ſame as under the reign of the Greek emperors.

Candia. The patriarch wears a triple tiara, writes his ſignature in red ink, and anſwers for all the debts of the clergy. To enable him to fulfil his engagements, he lays impoſitions on the reſt of the biſhops, and particularly on the monaſteries, from which he draws very handſome contributions. He is conſidered as the head of the Greeks, whom he protects, as far as his ſlender credit goes. The orders of government are directed to him on important occaſions; and he is the only one of all the Greeks in the iſland, who enjoys the privilege of entering the city on horſeback.

CANDIA, is the capital of the above iſland, ſituated on its northern coaſt, in E. Long. 25. 0. N. Lat. 35. 30. It ſtands on the ſame ſituation which was formerly occupied by Heraclea, and is the ſeat of government under the Turks. Its walls, which are more than a league in compaſs, are in good repair, and defended by deep ditches, but not protected by any exterior fort. Towards the ſea, it has no attacks to fear; becauſe the ſhallowneſs of the harbour renders it inacceſſible to ſhips of war.

The Porte generally commits the government of this iſland to a pacha of three tails. The principal officers, and ſeveral bodies of the Ottoman ſoldiery, are ſtationed here. This city, when under the Venetians, was opulent, commercial, and populous; but it has now loſt much of its former ſtrength and grandeur. The harbour, naturally a fine baſon, in which ſhips were ſecurely ſheltered from every ſtorm, is every day becoming narrower and ſhallower. At preſent it admits only boats, and ſmall ſhips after they have diſcharged a part of their freight. Thoſe veſſels, which the Turks freight at Candia, are obliged to go almoſt empty to the port of Standie, whither their cargoes are conveyed to them in barks. Such inconveniences are highly unfavourable to commerce; and as government never thinks of removing them, the trade of Candia is therefore conſiderably decayed.

Candia, which was embelliſhed by the Venetians with regular ſtreets, handſome houſes, a fine ſquare, and a magnificent ciſtern, contains at preſent but a ſmall number of inhabitants, notwithſtanding the vaſt extent of the area encloſed within its walls. Several diviſions of the city are void of inhabitants. That in which the market-place ſtands is the only one which diſcovers any ſtir of buſineſs, or ſhow of affluence. The Mahometans have converted moſt of the Chriſtian temples into moſques; yet they have left two churches to the Greeks, one to the Armenians, and a ſynagogue to the Jews. The Capuchins poſſeſs a ſmall convent, with a chapel in which the vice-conſul of France hears maſs. At preſent he is the only Frenchman who attends it, as the French merchants have taken up their reſidence at Canea.

Weſt of the city of Candia is an extenſive range of hills, which are a continuation of Mount Ida, and of which the extremity forms the promontory of Dion. On the way to Dion, we find Palio Caſtro, on the ſhore; a name which the modern Greeks give indifferently to all remains of ancient cities. Its ſituation correſponds to that of the ancient Panormus, which ſtood north-weſt from Heraclea.

The river which runs weſt of Candia was anciently known by the name of Triton; near the ſource of which Minerva ſprung from the brain of Jove. Loaxus is a little farther diſtant. About a league eaſt of that city, the river Ceratus flows through a delightful vale. According to Strabo, in one part of its courſe it runs near by Gnoſſus. A little beyond that, is another river ſuppoſed to be Therenus, on the banks of which, fable relates that Jupiter conſummated his marriage with Juno. For the ſpace of more than half a league round the walls of Candia there is not a ſingle tree to be ſeen. The Turks cut them all down in the time of the ſiege, and laid waſte the gardens and orchards. Beyond that extent, the country is plentifully covered with corn and fruit trees. The neighbouring hills are overſpread with vineyards, which produce the malmſey of Mount Ida,—worthy of preference at the table of the moſt exquiſite connoiſſeur in wines. That ſpecies of wine, though little known, has a fine flavour, a very pleaſant reliſh, and is highly eſteemed in the iſland. Candiac ‖ Candle.

CANDIAC, JOHN LEWIS, a premature genius, born at Candiac in the dioceſe of Niſmes in France, in 1719. In the cradle he diſtinguiſhed his letters: at 13 months, he knew them perfectly: at three years of age, he read Latin, either printed or in manuſcript: at four, he tranſlated from that tongue: at ſix, he read Greek and Hebrew; was maſter of the principles of arithmetic, hiſtory, geography, heraldry, and the ſcience of medals; and had read the beſt authors on almoſt every branch of literature. He died of a complication of diſorders, at Paris, in 1726.

CANDIDATE, a perſon who aſpires to ſome public office.

In the Roman commonwealth, they were obliged to wear a white gown during the two years of their ſoliciting a place. This garment, according to Plutarch, they wore without any other clothes, that the people might not ſuſpect they concealed money for purchaſing votes, and alſo that they might more eaſily ſhow to the people the ſcars of thoſe wounds they had received in fighting for the defence of the commonwealth. The candidates uſually declared their pretenſions a year before the time of election, which they ſpent in making intereſt and gaining friends. Various arts of popularity were practiſed for this purpoſe, and frequent circuits made round the city, and viſits and compliments to all ſorts of perſons, the proceſs of which was called *ambitus*. See AMBITUS.

CANDIDATI MILITES, an order of ſoldiers, among the Romans, who ſerved as the emperor's body-guards to defend him in battle. They were the talleſt and ſtrongeſt of the whole troops, and moſt proper to inſpire terror. They were called *candidati*, becauſe clothed in white, either that they might be more conſpicuous, or becauſe they were conſidered in the way of preferment.

CANDISH, a conſiderable province of Aſia, in the dominions of the Great Mogul, bounded by Chytor and Malva on the north, Orixa on the eaſt, Decan on the ſouth, and Guzerat on the weſt. It is populous and rich; and abounds in cotton, rice, and indigo. Brampore is the capital town.

CANDLE, a ſmall taper of tallow, wax, or ſpermaceti; the wick of which is commonly of ſeveral threads of cotton, ſpun and twiſted together.

A tallow-candle, to be good, muſt be half ſheep's and half bullock's tallow; for hog's tallow makes the candle

Candle. candle gutter, and always gives an offenſive ſmell, with a thick black ſmoke. The wick ought to be pure, ſufficiently dry, and properly twiſted; otherwiſe the candle will emit an inconſtant vibratory flame, which is both prejudicial to the eyes and inſufficient for the diſtinct illumination of objects.

There are two ſorts of tallow-candles; the one dipped, the other moulded: the former are the common candles; the others are the invention of the ſieur le Brege at Paris.

As to the method of making candles in general: After the tallow has been weighed, and mixed in the due proportions, it is cut into very ſmall pieces, that it may melt the ſooner; for the tallow in lumps, as it comes from the butchers, would be in danger of burning or turning black, if it were left too long over the fire. Being perfectly melted and ſkimmed, they pour a certain quantity of water into it, proportionable to the quantity of tallow. This ſerves to precipitate to the bottom of the veſſel the impurities of the tallow which may have eſcaped the ſkimmer. No water, however, muſt be thrown into the tallow deſigned for the three firſt dips; becauſe the wick, being ſtill quite dry, would imbibe the water, which makes the candles crackle in burning, and renders them of bad uſe. The tallow, thus melted, is poured into a tub, through a coarſe ſieve of horſe-hair, to purify it ſtill more, and may be uſed after having ſtood three hours. It will continue fit for uſe 24 hours in ſummer and 15 in winter. The wicks are made of ſpun cotton, which the tallow-chandlers buy in ſkains, and which they wind up into bottoms or clues; whence they are cut out, with an inſtrument contrived on purpoſe, into pieces of the length of the candle required; then put on the ſticks or broaches, or elſe placed in the moulds, as the candles are intended to be either dipped or moulded.

Wax-candles are made of a cotton or flaxen wick, ſlightly twiſted, and covered with white or yellow wax. Of theſe, there are ſeveral kinds: ſome of a conical figure, uſed to illuminate churches, and in proceſſions, funeral ceremonies, &c. (ſee Taper); others of a cylindrical form, uſed on ordinary occaſions. The firſt are either made with a ladle or the hand. 1. To make wax-candles with the ladle. The wicks being prepared, a dozen of them are tied by the neck, at equal diſtances, round an iron circle, ſuſpended over a large baſon of copper tinned, and full of melted wax: a large ladle full of this wax is poured gently on the tops of the wicks one after another, and this operation continued till the candle arrive at its deſtined bigneſs; with this precaution, that the three firſt ladles be poured on at the top of the wick, the fourth at the height of $\frac{1}{4}$, the fifth at $\frac{1}{2}$, and the ſixth at $\frac{1}{4}$, in order to give the candle its pyramidal form. Then the candles are taken down, kept warm, and rolled and ſmoothed upon a walnut-tree table, with a long ſquare inſtrument of box, ſmooth at the bottom. 2. As to the manner of making wax-candles by the hand, they begin to ſoften the wax, by working it ſeveral times in hot water, contained in a narrow but deep caldron. A piece of the wax is then taken out, and diſpoſed by little and little around the wick, which is hung on a hook in the wall, by the extremity oppoſite to the neck; ſo that they begin with the big end, diminiſhing ſtill as they deſcend towards the neck. In other reſpects the method is nearly the Candle. ſame as in the former caſe. However, it muſt be obſerved, that, in the former caſe, water is always uſed to moiſten the ſeveral inſtruments, to prevent the wax from ſticking; and in the latter, oil of olives, or lard, for the hands, &c. The cylindrical wax-candles are either made as the former, with a ladle, or drawn. Wax-candles drawn, are ſo called, becauſe actually drawn in the manner of wire, by means of two large rollers of wood, turned by a handle, which, turning backwards and forwards ſeveral times, paſs the wick through melted wax contained in a braſs baſon, and at the ſame time through the holes of an inſtrument like that uſed for drawing wire faſtened at one ſide of the baſon.

If any chandlers mix with their wares any thing deceitfully, &c. the candles ſhall be forfeited, by ſtat. 23 Eliz.; and a tax or duty is granted on candles, by 8 and 9 Anne, cap. 6. made for ſale, of one penny a pound, beſides the duty upon tallow, by 8 Anne, cap. 9. And by 24 Geo. III. cap. 11. an additional duty of a halfpenny a pound: and by the ſame an additional duty of a halfpenny a pound is laid upon all candles imported (except thoſe of wax and ſpermaceti, for which ſee *Wax Candles*), ſubject alſo to the two additional 5 per cents. impoſed by 19 and 22 Geo. III. beſides the duty of $2\frac{1}{4}$d. formerly impoſed by 2 W. ſeſſ. 2. cap. 4. 8 Anne, cap. 9. and 9 Anne, cap. 6. And every maker of candles, other than wax candles, for ſale, ſhall annually take out a licenſe at 1l. The maker of candles ſhall, in four weeks within the bills, and elſewhere in ſix weeks, after entry, clear off the duties on pain of double duty: nor ſell any after default in payment on pain of double value; 8 Anne, cap. 9. The makers of candles are not to uſe melting houſes, without making a true entry, on pain of 100l. and to give notice of making candles to the exciſe officer for the duties; and of the number, &c. or ſhall forfeit 50l. ſtat. 11. Geo. I. cap. 30. See alſo 23 Geo. II. cap. 21. and 26 Geo. II. cap. 32. No maker of candles for ſale ſhall begin to make candles, without notice firſt given to the officers, unleſs from September 29th to March 25th yearly, between ſeven in the morning and five in the evening, and from March 25th to September 29th, between five in the morning and ſeven in the evening, on pain of 10l. 10 Anne, cap. 26. The penalty of obſtructing the officer is 20l. and of removing candles before they are ſurveyed 20l. 8 Anne, cap. 9. The penalty of privately making candles is the forfeiture of the ſame and utenſils, and 100l. 5 Geo. III. cap. 43. And the penalty of mingling weighed with unweighed candles, of removing them before they are weighed, or of concealing them, is the forfeiture of 100l. 11 Geo. cap. 30. Candles, for which the duty hath been paid, may be exported, and the duty drawn back; but no draw-back ſhall be allowed on the exportation of any foreign candles imported. 8 Ann. cap. 9. 23 Geo. II. cap. 21.

The Roman candles were at firſt little ſtrings dipt in pitch, or ſurrounded with wax; though afterwards they made them of the papyrus, covered likewiſe with wax; and ſometimes alſo of ruſhes, by ſtripping off the outer rind, and only retaining the pith.—For religious offices, wax candles were uſed; for vulgar uſes, thoſe

Candle.

those of tallow. Lord Bacon proposes candles of divers compositions and ingredients, as also of different sorts of wicks; with experiments of the degrees of duration, and light of each. Good housewives bury their candles in flour or bran, which it is said increases their lasting almost half.

Experiments to determine the real and comparative value of burning CANDLES *of different sorts and sizes.*

	Numb. of candles in one pound.	Weight of one candle. Oz. Dr.	The time one candle lasted Hr. Min.	The time that one pound will last. Hr. Min.	The expence in 12 hours when candles are at 6d per dozen, which also shows the proportion of the expence at any price per dozen. Farthings and 100th parts.
Small wick.	18⅓	0 14	3 15	59 26	4.85
Large wick.	19	0 13½	2 40	50 34	5.70
	16½	0 15½	2 40	44 2	6.54
	12	1 5⅓	3 27	41 24	6.96
*	10¾	1 8	3 36	38 24	7.50
*	7¾	2 1	4 9	32 12	8.94
*	8	2 0	4 15	34 0	8.47
	5¾	2 13	5 19	30 15	9.53
	Mould-candles				Mould-candl. at 7s. per doz.
	5⅞	2 12	7 20	42 39	7.87
	4	4 0	9 3	36 20	9.28

N. B. The time that one candle lasted was taken from an average of several trials in each size.

It is observable, in optics, that the flame of two candles joined, gives a much stronger light than both of them separate. The observation was suggested by Dr Franklin. Probably the union of the two flames produces a greater degree of heat, whereby the vapour is attenuated, and the particles of which light consists are more copiously emitted.

Mr Nicholson has made some interesting observations on the light afforded by lamps and candles, which we shall lay before our readers in his own words †. " We are acquainted with no means, (says he), unless we may except electricity, of producing light but by combustion, and this is most probably of the same nature. The rude method of illumination consists in successively burning certain masses of fuel in the solid state. Common fires answer this purpose in the apartments of houses, and in some light-houses: small pieces of resinous wood, and the bituminous coal called *kannel-coal*, are in some countries applied to the same use; but the most general and useful method is that in which fat oil, of an animal or vegetable kind, is burned by means of a wick. These instruments of illumination are either lamps or candles. In the lamp, the oil must be one of those which retains its fluidity in the ordinary temperature of the atmosphere. The candle is formed of an oil, or other material, which is not fusible but at a temperature considerably elevated.

† *Philosoph. Jour.* vol. i.

" The method of measuring the comparative intensities of light is one of the first requisites in an inquiry concerning the art of illumination. Two methods of considerable accuracy are described in the *Traité d'Optique* of Bouguer, of which an abridged account is given by Dr Priestley in his Optics. The first of these two methods has been used by others since that time, and probably before, from its very obvious nature, but particularly by Count Rumford, who has given a description and drawings of an instrument called the *photometer*, in the Philosophical Transactions for 1794. The principle it is grounded upon is, that if two lights shine upon the same surface at equal obliquities, and an opake body be interposed, the two shadows it will produce must differ in blackness or intensity in the same degree. For the shadow formed by intercepting the greater light will be illuminated by the smaller light only, and reversely the other shadow will be illuminated by the greater light. That is to say, in short, the stronger light will be attended with a deeper shadow. But it is easy, by removing the greater light to a greater distance, to render the illumination it produces at the common surface equal to that afforded by the less. Experiments of this kind may be conveniently made by fastening a sheet of white paper against the wall of a room. The two lights or candles intended to be compared, must then be placed so that the ray of light from each shall fall with nearly the same angle of incidence upon the middle of the paper. By some experiments made in this way in the year 1785, I was satisfied that the degree of illumination could be thus ascertained to the 80th or 90th part of the whole.

" By experiments of this kind many useful particulars may be shewn. Thus, for example, the light of a candle, which is so exceedingly brilliant when first snuffed, is very speedily diminished to one-half, and is usually not more than one-fifth or one-sixth before the uneasiness of the eye induces us to snuff it. Whence it follows, that if candles could be made so as not to require snuffing, the average quantity of light afforded by the same quantity of combustible matter would be more than doubled. In the same way, likewise, since the cost and duration of candles, and the consumption of oil in lamps, are easily ascertainable, it may be shewn whether more or less of light is obtained at the same expence during a given time, by burning a number of small candles instead of one of greater thickness. From a few experiments already made out of the numerous and useful series that presents itself, I have reason to think that there is very much waste in this expensive article of accommodation.

" In the lamp there are three articles which demand our attention, the oil, the wick, and the supply of air. It is required that the oil should be readily inflammable, without containing any fetid substance which may prove offensive, or mucilage, or other matter, to obstruct the channels of the wick. I do not know of any process for meliorating oils for this purpose, excepting that of washing with water containing acid or alkali. Either of these is said to render the mucilage of animal oils more soluble in the water; but acid is preferred, because it is less disposed to combine with the oil itself. The office of the wick appears to be chiefly, if not solely, to convey the oil by capillary attraction to the place of combustion. As the oil is consumed and flies off, other oil succeeds, and in this way a continued current of oil and maintenance of the flame are effected. But as the wicks of lamps are commonly formed

Candle. of combuſtible matter, it appears to be of ſome conſequence what the nature and ſtructure of this material may be. It is certain that the flame afforded by a wick of ruſh differs very conſiderably from that afforded by cotton; though perhaps this difference may, in a great meaſure, depend on the relative dimenſions of each. And if we may judge from the different odour in blowing out a candle of each ſort, there is ſome reaſon to ſuſpect that the decompoſition of the oil is not effected preciſely in the ſame manner in each. We have alſo ſome obſcure accounts of prepared wicks for lamps, which are ſtated to poſſeſs the property of facilitating the combuſtion of very impure oils, ſo that they ſhall burn for many hours without ſmoke or ſmell.

"The acceſs of air is of the laſt importance in every proceſs of combuſtion. When a lamp is fitted up with a very ſlender wick, the flame is ſmall, and of a brilliant white colour: if the wick be larger, the combuſtion is leſs perfect, and the flame is brown: a ſtill larger wick not only exhibits a brown flame, but the lower internal part appears dark, and is occupied by a portion of volatilized matter, which does not become ignited until it has aſcended towards the point. When the wick is either very large or very long, part of this matter eſcapes combuſtion, and ſhews itſelf in the form of coal or ſmoke. The different intenſity of the ignition of flame, according to the greater or leſs ſupply of air, is remarkably ſeen by placing a lamp with a ſmall wick beneath a ſhade of glaſs not perfectly cloſed below, and more or leſs covered above. While the current of air through the glaſs ſhade is perfectly free, the flame is white; but in proportion as the aperture above is diminiſhed, the flame becomes brown, long, wavering, and ſmoky; it inſtantly recovers its original whiteneſs when the opening is again enlarged. The inconvenience of a thick wick has been long ſince obſerved, and attempts made to remove it: in ſome inſtances by ſubſtituting a number of ſmall wicks inſtead of a larger; and in others, by making the wick flat inſtead of cylindrical. The moſt ſcientific improvement of this kind, though perhaps leſs ſimple than the ordinary purpoſes of life demand, is the well-known lamp of Argand. In this the wick forms a hollow cylinder or tube, which ſlides over another tube of metal, ſo as to afford an adjuſtment with regard to its length. When this wick is lighted, the flame itſelf has the figure of a thin tube, to the inner as well as the outer ſurface of which the air has acceſs from below. And a cylindrical ſhade of glaſs ſerves to keep the flame ſteady, and in a certain degree to accelerate the current of air. In this very ingenious apparatus many experiments may be made with the greateſt facility. The inconvenience of a long wick, which ſupplies more oil than the volume of flame is capable of burning, and which conſequently emits ſmoke, is ſeen at once by raiſing the wick; and on the other hand, the effect of a ſhort wick, which affords a diminutive flame merely for want of a ſufficient ſupply of combuſtible matter, is obſervable by the contrary proceſs.

"The moſt obvious inconvenience of lamps in general, ariſes from the fluidity of the combuſtible material, which requires a veſſel adapted to contain it, and even in the beſt conſtructed lamps is more or leſs liable to be ſpilled. When the wick of a lamp is once adjuſted as to its length, the flame continues nearly in the ſame ſtate for a very conſiderable time. Candle.

"It is almoſt unneceſſary to deſcribe a thing ſo univerſally known as a candle. This article is formed of a conſiſtent oil, which envelopes a porous wick of fibrous vegetable matter. The cylindrical form and dimenſions of the oil are given either by caſting it in a mould, or by repeatedly dipping the wick into the fuſed ingredient. Upon comparing a candle with a lamp, two very remarkable particulars are immediately ſeen. In the firſt place, the tallow itſelf, which remains in the refuſed ſtate, affords a cup or cavity to hold that portion of melted tallow which is ready to flow into the lighted part of the wick. In the ſecond place, the combuſtion, inſtead of being confined, as in the lamp, to a certain determinate portion of the fibrous matter, is carried, by a ſlow ſucceſſion, through the whole length. Hence ariſes the greater neceſſity for frequent ſnuffing the candle; and hence alſo the ſtation of the freezing point of the fat oil becomes of great conſequence. For it has been ſhown that the brilliancy of the flame depends very much on the diameter of the wick being as ſmall as poſſible; and this requiſite will be moſt attainable in candles formed of a material that requires a higher degree of heat to fuſe it. The wick of a tallow candle muſt be made thicker in proportion to the greater fuſibility of the material, which would otherwiſe melt the ſides of the cup, and run over in ſtreams. The flame will therefore be yellow, ſmoky, and obſcure, excepting for a ſhort time immediately after ſnuffing. Tallow melts at the 92d degree of Fahrenheit's thermometer; ſpermaceti at the 133d degree; the fatty matter formed of fleſh after long immerſion in water melts at 127°; the *pela* of the Chineſe, at 145°; bees-wax at 142°; and bleached wax at 155°. Two of theſe materials are well known in the fabrication of candles. Wax in particular does not afford ſo brilliant a flame as tallow: but, on account of its fuſibility, the wick can be made ſmaller; which not only affords the advantage of a clear perfect flame, but from its flexibility it is diſpoſed to turn on one ſide, and come in contact with the external air, which completely burns the extremity of the wick to white aſhes, and thus performs the office of ſnuffing. We ſee, therefore, that the important object to ſociety of rendering tallow candles equal to thoſe of wax, does not at all depend on the combuſtibility of the reſpective materials, but upon a mechanical advantage in the cup, which is afforded by the inferior degree of fuſibility in the wax; and that, to obtain this valuable object, one of the following effects muſt be produced: Either the tallow muſt be burned in a lamp, to avoid the gradual progreſſion of the flame along the wick; or ſome means muſt be deviſed to enable the candle to ſnuff itſelf, as the wax candle does; or, laſtly, the tallow itſelf muſt be rendered leſs fuſible by ſome chemical proceſs. I have no great reaſon to boaſt of ſucceſs in the endeavour to effect theſe; but my hope is, that the facts and obſervations here preſented may conſiderably abridge the labour of others in the ſame purſuit.

"The makers of thermometers and other ſmall articles with the blow-pipe and lamp, give the preference to tallow inſtead of oil, becauſe its combuſtion is more complete,

Candle. complete, and does not blacken the glaſs. In this operation, the heat of the lamp melts the tallow which is occaſionally brought into its vicinity by the workman. But for the uſual purpoſes of illumination, it cannot be ſuppoſed that a perſon can attend to ſupply the combuſtible matter. Conſiderable difficulties ariſe in the project for affording this gradual ſupply as it may be wanted. A cylindrical piece of tallow was inſerted into a metallic tube, the upper aperture of which was partly cloſed by a ring, and the central part occupied by a metallic piece nearly reſembling that part of the common lamp which carries the wick. In this apparatus the piece laſt deſcribed was intended to anſwer the ſame purpoſe, and was provided with a ſhort wick. The cylinder of tallow was ſupported beneath in ſuch a manner that the metallic tube and other part of this lamp were left to reſt with their whole weight upon the tallow at the ring or contraction of the upper aperture. In this ſituation the lamp was lighted. It burned for ſome time with a very bright clear flame, which, when compared with that of a candle, poſſeſſed the advantages of uniform intenſity, and was much ſuperior to the ordinary flame of a lamp in its colour, and the perfect abſence of ſmell. After ſome minutes it began to decay, and very ſoon afterwards went out. Upon examination it was found, that the metallic piece which carried the wick had fuſed a ſufficient quantity of tallow for the ſupply during the combuſtion; that part of this tallow had flowed beneath the ring, and to other remote parts of the apparatus, beyond the influence of the flame; in conſequence of which, the tube, and the cylinder of tallow were faſtened together, and the expected progreſſion of ſupply prevented. It ſeems probable, that in every lamp for burning conſiſtent oils, the material ought to be ſo diſpoſed that it may deſcend to the flame upon the principle of the fountain reſervoir. I ſhall not here ſtate the obſtacles which preſent themſelves in the proſpect of this conſtruction, but ſhall diſmiſs the ſubject by remarking, that a contrivance of this nature would be of the greateſt public utility.

"The wick of a candle, being ſurrounded by the flame, is nearly in the ſituation of a body expoſed to deſtructive diſtillation in a cloſe veſſel. After loſing its volatile products, the carbonaceous reſidue retains its figure, until, by the deſcent of the flame, the external air can have acceſs to its upper extremity. But, in this caſe, the requiſite combuſtion, which might ſnuff it, is not effected. For the portion of oil emitted by the long wick is not only too large to be perfectly burned, but alſo carries off much of the heat of the flame while it aſſumes the elaſtic ſtate. By this diminiſhed combuſtion and increaſed efflux of half-decompoſed oil, a portion of coal or ſoot is depoſited on the upper part of the wick, which gradually accumulates, and at length aſſumes the appearance of a fungus. The candle does not then give more than one-tenth of the light emitted in its beſt ſtate. Hence it is that a candle of tallow cannot ſpontaneouſly ſnuff itſelf. It was not probable that the addition of a ſubſtance containing vital air or oxygene would ſupply that principle at the preciſe period of time required; but, as experiment is the teſt of every probability of this nature, I ſoaked a wick of cotton in a ſolution of nitre, then dried it, and made a candle. When this came to be lighted, nothing remarkable happened for a ſhort time; Candle. at the expiration of which a decrepitation followed at the lower extremity of the flame, which completely divided the wick where the blackened part commences. The whole of the matter in combuſtion therefore fell off, and the candle was of courſe inſtantly extinguiſhed. Whether this would have happened in all proportions of the ſalt or conſtructions of the candle I did not try, becauſe the ſmell of azote was ſufficiently ſtrong and unpleaſant to forbid the uſe of nitre in the purſuit. From various conſiderations I am diſpoſed to think that the ſpontaneous ſnuffing of candles made of tallow, or other fuſible materials, will ſcarcely be effected but by the diſcovery of ſome material for the wick which ſhall be voluminous enough to abſorb the tallow, and at the ſame time ſufficiently flexible to bend on one ſide.

"The moſt promiſing ſpeculation reſpecting this moſt uſeful article, ſeems to direct itſelf to the cup which contains the melted tallow. The imperfection of this part has already been noticed, namely, that it breaks down by fuſion, and ſuffers its fluid contents to eſcape. The Chineſe have a kind of candle about half an inch in diameter, which, in the harbour of Canton, is called *lobchock;* but whether the name be Chineſe, or the corruption of ſome European word, I am ignorant. The wick is of cotton, wrapped round a ſmall ſtick or match of the bamboo cane. The body of the candle is white tallow; but the external part to the thickneſs of perhaps one-thirtieth of an inch, conſiſts of a waxy matter coloured red. This covering gives a conſiderable degree of ſolidity to the candle, and prevents its guttering, becauſe leſs fuſible than the tallow itſelf. I did not obſerve that the ſtick in the middle was either advantageous or the contrary; and, as I now write from the recollection of this object at ſo remote a period as 25 years ago, I can only conjecture that it might be of advantage in throwing up a leſs quantity of oil into the flame than would have been conveyed by a wick of cotton ſufficiently ſtout to have occupied its place unſupported in the axis of the candle.

"Many years ago I made a candle in imitation of the lobchock. The expedient to which I had recourſe conſiſted in adapting the wick in the uſual pewter mould: wax was then poured in, and immediately afterwards poured out: the film of wax which adhered to the inner ſurface of the mould ſoon became cool; and the candle was completed by filling the mould with tallow. When it was drawn out, it was found to be cracked longitudinally on its ſurface, which I attributed to the contraction of the wax, by cooling, being greater than that of the tallow. At preſent I think it equally probable that the cracking might have been occaſioned by too ſudden cooling of the wax before the tallow was poured in; but other avocations prevented the experiments from being varied and repeated. It is probable that the Chineſe external coating may not be formed of pure hard bleached wax.

"But the moſt deciſive remedy for the imperfection of this cheapeſt, and in other reſpects beſt material for candles, would undoubtedly be to diminiſh its fuſibility. Various ſubſtances may be combined with tallow, either in the direct or indirect method. In the latter way, by the decompoſition of ſoap, a number of experiments were made by Berthollet, of which an account

Candle. count is inſerted in the memoirs of the academy at Paris for the year 1780, and copied into the 26th volume of the Journal de Phyſique. None of theſe point directly to the preſent object; beſides which, it is probable that the ſoap made uſe of by that eminent chemiſt was formed not of tallow, but oil. I am not aware of any regular ſeries of experiments concerning the mutual action of fat oils and other chemical agents, more eſpecially ſuch as may be directed to this important object of diminiſhing its ſolubility; for which reaſon I ſhall mention a few experiments made with this view.

"1. Tallow was melted in a ſmall ſilver veſſel. Solid tallow ſinks in the fluid, and diſſolves without any remarkable appearance. 2. Gum ſandarach in tears was not diſſolved, but emitted bubbles, ſwelled up, became brown, emitted fumes, and became criſp or friable. No ſolution nor improvement of the tallow. 3. Shellac ſwelled up with bubbles, and was more perfectly fuſed than the gum ſandarach in the former experiment. When the tallow was poured off, it was thought to congeal rather more ſpeedily. The lac did not appear to be altered. 4. Benzoin bubbled without much ſwelling, was fuſed, and emitted fumes of an agreeable ſmell, though not reſembling the flowers of benzoin. A ſlight or partial ſolution ſeemed to take place. The benzoin was ſofter and of a darker colour than before, and the tallow leſs conſiſtent. 5. Common reſin unites very readily with melted tallow, and forms a more fuſible compound than the tallow itſelf. 6. Camphor melts eaſily in tallow, without altering its appearance. When the tallow is near boiling, camphoric fumes fly off. The compound appeared more fuſible than tallow. 7. The acid or flowers of benzoin diſſolves in great quantities without any ebullition or commotion. Much ſmoke ariſes from the compound, which does not ſmell like the acid of benzoin. Tallow alone does not fume at a low heat, though it emits a ſmell ſomething like that of oil-olive. When the proportion of the acid was conſiderable, ſmall needled cryſtals appeared as the temperature diminiſhed. The appearances of ſeparation are different according to the quantity of acid. The compound has the hardneſs and conſiſtence of firm ſoap, and is partially tranſparent. 8. Vitriolated tartar, nitre, white ſugar, cream of tartar, cryſtallized borax, and the ſalt ſold in the markets under the name of ſalt of lemons, but which is ſuppoſed to be the eſſential ſalt of ſorrel, or vegetable alkali ſuperſaturated with acid of ſugar, were reſpectively tried without any obvious mutual action or change of properties in the tallow. 9. Calcined magneſia rendered tallow opake and turbid, but did not ſeem to diſſolve. Its effect reſembled that of lime.

"It is propoſed to try the oxigenated acetous acid, or radical vinegar; the acid of ants, of ſugar, of borax, of galls, the tanning principle, the ſerous and gelatinous animal matter, the fecula of vegetables, vegetable gluten, bird-lime, and other principles, either by direct or indirect application. The object, in a commercial point of view, is entitled to an extenſive and aſſiduous inveſtigation. Chemiſts in general ſuppoſe the hardneſs or leſs fuſibility of wax to ariſe from oxygen, and to this object it may perhaps be advantageous to direct a certain portion of the inquiry. The metallic ſalts and calces are the combinations from which this principle is moſt commonly obtained; but the combinations of theſe with fat oils have hitherto afforded little promiſe of the improvement here ſought. The ſubject is however ſo little known, that experiments of the looſeſt and moſt conjectural kind are by no means to be deſpiſed." Candle.

Lighting a Candle *by a ſmall ſpark of electricity.* This method, which is an invention of Dr Ingenhouſz, is recorded in the Phil. Tranſ. vol. lxviii. It is done by a ſmall phial, having eight or ten inches of metallic coating, or even leſs, charged with electricity, which may be done at any time of the night by a perſon who has an electric machine in his room. "When I have occaſion to light a candle," ſays he, "I charge a ſmall coated phial, whoſe knob is bent outwards, ſo as to hang a little over the body of the phial; then I wrap ſome looſe cotton over the extremity of a long braſs pin or a wire, ſo as to ſtick moderately faſt to its ſubſtance. I next roll this extremity of the pin wrapped up with cotton in ſome fine powder of reſin, (which I always keep in readineſs upon the table for this purpoſe, either in a wide-mouthed phial or in a looſe paper); this being done, I apply the extremity of the pin or wire to the external coating of the charged phial, and bring as quickly as poſſible the other extremity wrapped round with cotton to the knob: the powder of reſin takes fire, and communicates its flame to the cotton, and both together burn long enough to light a candle. As I do not want more than half a minute to light my candle in this way, I find it a readier method than kindling it by a flint and ſteel or calling a ſervant. I have found, that powder of white or yellow reſin lights eaſier than that of brown. The *farina lycopodii* may be uſed for the ſame purpoſe: but it is not ſo good as the powder of reſin, becauſe it does not take fire quite ſo readily, requiring a ſtronger ſpark not to miſs: beſides, it is ſoon burnt away. By dipping the cotton in oil of turpentine, the ſame effect may be as readily obtained, if you take a jar ſomewhat greater in ſize. This oil will inflame ſo much the readier if you ſtrew a few fine particles of braſs upon it. The pin duſt is the beſt for this purpoſe; but as this oil is ſcattered about by the exploſion, and when kindled fills the room with much more ſmoke than the powder of reſin, I prefer the laſt."

Candle-Bombs, a name given to ſmall glaſs bubbles, having a neck about an inch long, with a very ſlender bore, by means of which a ſmall quantity of water is introduced into them, and the orifice afterwards cloſed up. This ſtalk being put through the wick of a burning candle, the vicinity of the flame ſoon rarefies the water into ſteam, by the elaſticity of which the glaſs is broken with a loud crack.

Candle is alſo a term of medicine, and is reckoned among the inſtruments of ſurgery. Thus the *candela fumalis*, or the *candela pro ſuffitu odorata*, is a maſs of an oblong form, conſiſting of odoriferous powders, mixed up with a third or more of the charcoal of willow or lime tree, and reduced to a proper conſiſtence with a mucilage of gum tragacanth, labdanum, or turpentine. It is intended to excite a grateful ſmell without any flame, to correct the air, to fortify the brain, and to excite the ſpirits.

Medicated Candle, the ſame with Bougie.

Candle. Sale or auction by inch of candle, is when

Candleberry || Candleſtick.

a ſmall piece of candle, being lighted, the byſtanders are allowed to bid for the merchandiſe that is ſelling; but the moment the candle is out, the commodity is adjudged to the laſt bidder.

There is alſo an excommunication by inch of candle; when the ſinner is allowed to come to repentance while a candle continues burning; but after it is conſumed, he remains excommunicated to all intents and purpoſes.

Ruſh-Candles, uſed in different parts of England, are made of the pith of a ſort of ruſhes, peeled or ſtripped of the ſkin, except on one ſide, and dipped in melted greaſe.

Candle-Wood, ſlips of pine about the thickneſs of a finger, uſed in New England and other colonies to burn inſtead of candles, giving a very good light. The French inhabitants of Tortuga uſe ſlips of yellow ſantal-wood for the ſame purpoſe, and under the ſame denomination, which yields a clear flame though of a green colour.

CANDLEBERRY TREE. See MYRICA, BOTANY *Index*.

CANDLEMAS, a feaſt of the church held on the ſecond day of February, in honour of the purification of the Virgin Mary. It is borrowed from the practice of the ancient Chriſtians, who on that day uſed abundance of lights both in their churches and proceſſions, in memory, as is ſuppoſed, of our Saviour's being on that day declared by Simon "to be a light to lighten the Gentiles." In imitation of this cuſtom, the Roman-catholics on this day conſecrate all the tapers and candles which they uſe in their churches during the whole year. At Rome, the Pope performs that ceremony himſelf; and diſtributes wax-candles to the cardinals and others, who carry them in proceſſion through the great hall of the Pope's palace. This ceremony was prohibited in England by an order of council in 1548.

CANDLEMAS, (2d Feb.) is made one of the four terms of the year for paying and receiving rents or borrowed money, &c.—In the courts of law, Candlemas term begins 15th January, and ends 3d February.

CANDLESTICK, an inſtrument to hold a candle, made in different forms, and of all ſorts of matter.

The golden candleſtick was one of the ſacred utenſils made by Moſes to be placed in the Jewiſh tabernacle. It was made of hammered gold, a talent in weight. It conſiſted of ſeven branches ſupported by a baſe or foot. Theſe branches were adorned at equal diſtances with ſix flowers like lilies, and with as many bowls and knobs placed alternately. Upon the ſtock and ſix branches of the candleſtick were the golden lamps, which were immoveable, wherein were put oil and cotton.

Theſe ſeven lamps were lighted every evening, and extinguiſhed every morning. The lamps had their tongs or ſnuffers to draw the cotton in or out, and diſhes underneath them to receive the ſparks or droppings of the oil. This candleſtick was placed in the antichamber of the ſanctuary on the ſouth ſide, and ſerved to illuminate the altar of perfume and the tabernacle of the ſhew-bread. When Solomon had built the temple of the Lord, he placed in it ten golden candleſticks of the ſame form as that deſcribed by Moſes, five on the north and five on the ſouth ſide of the holy: But after the Babyloniſh captivity, the golden candleſtick was again placed in the temple, as it had been before in the tabernacle by Moſes. This ſacred utenſil, upon the deſtruction of the temple by the Romans, was lodged in the temple of Peace built by Veſpaſian; and the repreſentation of it is ſtill to be ſeen on the triumphal arch at the foot of Mount Palatine, on which Veſpaſian's triumph is delineated. Candy.

CANDY, a large kingdom of Aſia, in the iſland of Ceylon. It contains about a quarter of the iſland; and as it is encompaſſed with high mountains, and covered with thick foreſts, through which the roads and paths are narrow and difficult, the king has them guarded to prevent his ſubjects from going into other countries. It is full of hills, from whence rivulets proceed which are full of fiſh; but as they run among the rocks, they are not fit for boats: however, the inhabitants are very dexterous in turning them to water their land, which is fruitful in rice, pulſe, and hemp.

Since the iſland of Ceylon fell into the hands of the Engliſh, we have obtained fuller information reſpecting it. Mr Percival, who has publiſhed an account of this iſland, mentions the jealouſy, both of the Dutch and of the natives, as difficulties which could not have been eaſily ſurmounted by travellers while it remained ſubject to Holland *. "The interior of the iſland (he ſays), owing to the jealouſy of the Dutch, has been little explored by Europeans; and any traveller who might have obtained the permiſſion of the Dutch to viſit it, could not have executed his purpoſe from the jealouſy of the natives. Since the Candians have been driven by their invaders into the mountains of the interior, it has been their policy carefully to prevent any European from ſeeing thoſe objects which might tempt the avarice of his countrymen, or from obſerving the approaches by which an army could penetrate their mountains. If an European by any accident was carried into their territories, they took every precaution to prevent him from eſcaping: and the guards ſtationed everywhere at the approaches, joined to the wide and pathleſs woods which divide the interior from the coaſt, rendered ſuch an attempt almoſt completely deſperate. When an ambaſſador was ſent from any European government to the king of Candy, he was watched with all that ſtrictneſs and jealouſy, which the ſuſpicious temper of uncivilized nations dictates. In an embaſſy which I attended to the court of that monarch, I had an opportunity of obſerving how careful the natives were to prevent ſtrangers from making any obſervations. Mr Boyd, who about twenty years ago went on a ſimilar embaſſy, was watched with the ſame particular circumſpection; and has therefore been able to add little to our ſtock of knowledge concerning the interior.

* *Account of Ceylon*, P. 231.

"The dominions of the native prince are completely cut off on all ſides from thoſe of the Europeans by almoſt impenetrable woods and mountains. The paſſes which lead through theſe to the coaſts are extremely ſteep and difficult, and ſcarcely known even by the natives themſelves. As ſoon as we advance from ten to twenty miles from the coaſts, a country preſents itſelf greatly differing from the ſea coaſt, both in ſoil, climate, and appearance. After aſcending the mountains and paſſing the woods, we find ourſelves in the midſt of a country not advanced many ſtages beyond the

Candy. the firſt ſtate of improvement, and which we are aſtoniſhed to find in the neighbourhood of the highly cultivated fields which ſurround Columbo. As we advance towards the centre of the iſland, the country gradually riſes, and the woods and mountains which ſeparate the ſeveral parts of the country become more ſteep and impervious.

"It is in the midſt of theſe faſtneſſes that the native prince ſtill preſerves thoſe remains of territory and power which have been left him by ſucceſſive invaders. His dominions are now much reduced in ſize; for beſides the whole of the ſea coaſts which were of any value, the Dutch, in their various attacks during the laſt century, have contrived to get into their power every tract from which they could derive either emolument or ſecurity. Thoſe provinces which ſtill remain to him are Nourecalva and Hotcourly towards the north and north-weſt; while Matuly, comprehending the diſtricts of Bintana, Velas, and Panoa, with a few others, occupies thoſe parts more to the eaſtward. To the ſouth-eaſt lies Ouvah, a province of ſome note, and giving the king one of his titles. The weſtern parts are chiefly included in the provinces of Cotemal and Hotteracorley. Theſe different provinces are ſubdivided into corles or diſtricts, and entirely belong to the native prince. It is needleſs to recount the names of thoſe diviſions which ſtretch towards the ſea coaſt, and are now chiefly in our poſſeſſion.

"In the higheſt and moſt centrical part of the native king's dominions lie the corles or counties of Oudanor and Tatanour, in which are ſituated the two principal cities. Theſe counties take the pre-eminence of all the reſt, and are both better cultivated, and more populous than any of the other diſtricts, and are diſtinguiſhed by the general name of Condé Udda; *condé* or *candé* in the native language ſignifying a mountain, and *udda* the greateſt or higheſt.

"This province of Condé Udda is even more inacceſſible than the others, and forms as it were a ſeparate kingdom of itſelf. On every ſide it is ſurrounded by lofty mountains covered with wood, and the paths by which it is entered ſeem little more than the tracks of wild beaſts. Guards are ſtationed all around to prevent both entrance and eſcape; for defence they might ſeem entirely ſuperfluous, did we not recollect that the perſeverance of the Dutch overcame all theſe obſtacles, and forced a way into the very centre of this natural fortification."

CANDY, a town of Aſia, and capital of a kingdom of the ſame name, in the iſland of Ceylon. It has been often burnt by the Portugueſe, when they were maſters of theſe coaſts. It is ſituated in E. Long. 79. 12. N. Lat. 7. 35.

We have the following deſcription of Candy by Mr Percival, whom we have already quoted, and who attended an embaſſy to the king.

"In the diſtrict of Tatanour lies Candy the royal reſidence and the capital of the native prince's dominions. It is ſituated at the diſtance of 80 miles from Columbo, and twice as far from Trincomalee, in the midſt of lofty and ſteep hills covered with thick jungle. The narrow and difficult paſſes by which it is approached are interſected with thick hedges of thorn; and hedges of the ſame ſort are drawn round the hills in the vicinity of Candy like lines of circumvallation. Through them the only paſſage is by gates of the ſame thorny materials, ſo contrived as to be drawn up and let down by ropes. When the Candians are obliged to retreat within theſe barriers, they cut the ropes, and then it is impoſſible to force a paſſage except by burning down the gates, which from their green ſtate, and the conſtant annoyance of the enemy ſheltered behind them, would prove an enterpriſe of time and difficulty. Theſe hedge-rows form the chief fortifications of Candy. The Malivagonga alſo nearly ſurrounds the hill on which it ſtands: that river is here broad, rocky, and rapid; a very ſtrict guard is kept on it, and every one who paſſes or repaſſes is cloſely watched and examined. Candy, Candying.

"The city itſelf is a poor miſerable-looking place, ſurrounded by a mud wall of no ſtrength whatever. It has been ſeveral times burnt by Europeans, and was once deſerted by the king, who retired to a more inacceſſible part of his dominions. It is upon occaſion of the embaſſy of General Macdowal, that any information concerning the preſent ſtate of Candy has been obtained; and even then it could be little more than gueſſed at, as the ambaſſador and his ſuite were admitted only by torch-light, and always retired before break of day. From what could then be obſerved, the city conſiſts of a long ſtraggling ſtreet built on the declivity of a hill; the houſes mean and low, but with their foundations raiſed in ſuch a manner above the level of the ſtreet that they appear quite lofty to paſſengers. The reaſon of this extraordinary taſte is to enable the king to hold his aſſemblies of the people and to have his elephant and buffalo fights in the ſtreet, without interfering with the houſes. When the king paſſes along the ſtreet, none of the inhabitants are allowed to appear before their houſes, or the paths on a level with them, as that would be attended with the heinous indecorum of placing a ſubject higher than the prince deſcended of the ſun.

"At the upper end of this ſtreet, ſtands the palace, a poor manſion for the abode of a king. It is ſurrounded with high ſtone walls, and conſiſts of two ſquares, one within the other. In the inner of theſe are the royal apartments, and it is there that the court is held and audiences given. The exterior of the palace and the reſt of the city could be but very partially obſerved by thoſe who attended General Macdowal, owing to the preſſure of the crowd, and the dazzling glare of the torches. By every account indeed which I have heard, Candy contains nothing worthy of notice, and from the want of either wealth or induſtry among the inhabitants, it is not indeed to be expected that any thing could be met with in this ſtraggling village to attract the attention of the traveller."

CANDY, or *Sugar-Candy*, a preparation of ſugar made by melting and cryſtallizing it ſix or ſeven times over, to render it hard or tranſparent. It is of three kinds, white, yellow, and red. The white comes from the loaf-ſugar, the yellow from the caſſonado, and the red from the muſcavado.

CANDYING, the act of preſerving ſimples in ſubſtance, by boiling them in ſugar. The perfor-

Cane, Canea.

mance of this originally belonged to the apothecaries, but is now become a part of the buſineſs of the confectioner.

CANE. See ARUNDO and CALAMUS, BOTANY *Index*.

CANE, denotes alſo a walking ſtick. It is cuſtomary to adorn it with a head of gold, ſilver, agate, &c. Some are without knots, and very ſmooth and even; others are full of knots about two inches diſtance from one another. Theſe laſt have very little elaſticity, and will not bend ſo well as the others.

Canes of Bengal are the moſt beautiful which the Europeans bring into Europe. Some of them are ſo fine, that people work them into bowls or veſſels, which being varniſhed over in the inſide, with black or yellow lacca, will hold liquors as well as glaſs or China ware does; and the Indians uſe them for that purpoſe.

CANE is alſo the name of a long meaſure, which differs according to the ſeveral countries where it is uſed. At Naples the cane is equal to 7 feet $3\frac{1}{2}$ inches Engliſh meaſure: the cane of Thouloufe and the Upper Languedoc, is equal to the varre of Arragon, and contains five feet $8\frac{1}{2}$ inches; at Montpellier, Provence, Dauphiny, and the Lower Languedoc, to ſix Engliſh feet $5\frac{1}{2}$ inches.

CANEA, a conſiderable town of the iſland of Candia, where a baſhaw reſides. It was built by the Venetians, and occupies part of the ſite of the ancient CYDONIA. It is but about two miles in compaſs; encircled on the land ſide with a ſingle wall, extremely thick; and defended by a broad and deep ditch, cut through a bed of rock, which extends all around the wall. By cutting it ſtill deeper, they might cauſe the ſea to flow round its ramparts; on which they have raiſed high platforms, that their great guns might command a wider extent of the adjacent plain. The city has only one gate, the gate of Retimo, protected by a half-moon battery, which is the only exterior fort. The ſide which faces the ſea is the beſt fortified. On the left of the harbour are four batteries, riſing one above another, and planted with a number of large cannons of caſt metal, marked with the arms of Venice. The firſt of theſe batteries ſtands cloſe on the brink of the ſea. The right ſide of the harbour is defended only by a ſtrong wall, extending along a chain of pointed rocks which it is dangerous for ſhips to approach. At the extremity of this wall, there is an old caſtle, falling into ruins. Beneath that caſtle, the Venetians had immenſe arſenals, vaulted with ſtone. Each of theſe vaults was of ſufficient length, breadth, and height, to ſerve as a work-ſhop for building a ſhip of the line. The ground is ſloping, and the outermoſt part of theſe capacious arſenals is on a level with the ſea; ſo that it was very eaſy to launch the ſhips built there into the water. The Turks are ſuffering that magnificent work to fall into ruins.

The city of Canea is laid out on a fine plan. The ſtreets are large and ſtraight; and the ſquares adorned with fountains. There are no remarkable buildings in it. Moſt of the houſes are flat-roofed, and have only one ſtory. Thoſe contiguous to the harbour are adorned with galleries, from which you enjoy a delightful proſpect. From the windows you diſcover the large bay formed between Cape Spada and Cape Melec, and all the ſhips that are entering in or paſſing out. The harbour, at preſent, receives ſhips of 200 tons burden; and it might be enlarged ſo as to admit the largeſt frigates. Its mouth is expoſed to the violence of the north winds, which ſometimes ſwell the billows above the ramparts. But, as it is narrow, and the bottom is good, ſhips that are well moored run no danger. At the time when Tournefort viſited Crete, Canea did not contain more than five or ſix thouſand inhabitants. But, at preſent, when the gates of Gira-Petra, Candia, and Retimo are choaked up, the merchants have retired to Canea; and it is reckoned to contain 16,000 ſouls. The environs of the town are admirable; being adorned with foreſts of olive-trees mixed with fields, vineyards, gardens, and brooks bordered with myrtle-trees and laurel-roſes. The chief revenue of this town conſiſts in oil-olive. E. Long. 24. 15. N. Lat. 35. 28.

Canella || Canes.

CANELLA. See BOTANY *Index*.

CANELLE, or CANE LAND, a large country in the iſland of Ceylon, called formerly the *kingdom of Cota*. It contains a great number of cantons, the principal of which are occupied by the Dutch. The chief riches of this country conſiſt in cinnamon, of which there are large foreſts. There are five towns on the coaſt, ſome forts, and a great number of harbours. The reſt of the country is inhabited by the natives; and there are ſeveral rich mines, from whence they get rubies, ſapphires, topazes, cats eyes, and ſeveral other precious ſtones.

CANEPHORÆ, in Grecian antiquity, virgins who when they became marriageable, preſented certain baſkets full of little curioſities to Diana, in order to get leave to depart out of her train, and change their ſtate of life.

CANEPHORIA, in Grecian antiquity, a ceremony which made part of a feaſt, celebrated by the Athenian virgins on the eve of their marriage day. At Athens the canephoria conſiſted in this, that the maid, conducted by her father and mother, went to the temple of Minerva, carrying with her a baſket full of preſents to engage the goddeſs to make the marriage-ſtate happy; or, as the ſcholiaſt of Theocritus has it, the baſket was intended as a kind of honourable amends made to that goddeſs, the protectrix of virginity, for abandoning her party; or as a ceremony to appeaſe her wrath. Suidas calls it a feſtival in honour of Diana.

CANEPHORIA is alſo the name of a feſtival in honour of Bacchus, celebrated particularly by the Athenians, on which the young maids carried golden baſkets full of fruit, which baſkets were covered, to conceal the myſtery from the uninitiated.

CANES, in Egypt and other eaſtern countries, a poor ſort of buildings for the reception of ſtrangers and travellers. People are accommodated in theſe with a room at a ſmall price, but with no other neceſſaries; ſo that, excepting the room, there are no greater accommodations in theſe houſes than in the deſerts, only that there is a market near.

CANES Venatici, in *Aſtronomy*, the Greyhounds, two new conſtellations, firſt eſtabliſhed by Hevelius, between the tail of the Great Bear and Bootes's arms, above the Coma Berenices. The firſt is called *aſterion*, being that next the Bear's tail; the other *chara*. They comprehend

Caneto || Cangiagio.

comprehend 23 ſtars, of which Tycho only obſerved two. The longitudes and latitudes of each are given by Hevelius. In the Britiſh Catalogue they are 25.

CANETO, a ſtrong town of Italy in the duchy of Mantua, ſeated on the river Oglio, which was taken by the Imperialiſts in 1701, by the French in 1702, afterwards by the Imperialiſts, and then by the French in 1705. E. Long. 10. 45. N. Lat. 40. 55.

CANGA, in the Chineſe affairs, a wooden clog borne on the neck, by way of puniſhment for divers offences. The canga is compoſed of two pieces of wood notched, to receive the criminal's neck; the load lies on his ſhoulders, and is more or leſs heavy according to the quality of his offence. Some cangas weigh 200lb; the generality from 50 to 60. The mandarins condemn to the puniſhment of the canga. Sentence of death is ſometimes changed for this kind of puniſhment.

CANGE, Charles du Freſne, Sieur du, one of the moſt learned writers of his time, was born at Amiens in 1601, and ſtudied at the Jeſuits college in that city. Afterwards he applied himſelf to the ſtudy of the law at Orleans, and gained great reputation by his works; among which are, 1. The hiſtory of the empire of Conſtantinople under the French emperors. 1. John Cinnamus's ſix books of the hiſtory of the affairs of John and Manuel Comnenus, in Greek and Latin, with hiſtorical and philological notes. 3. *Gloſſarium ad Scriptores mediæ et infimæ Latinitatis.*

CANGI, Ceangi, or *Cangani*, anciently a people of Britain, concerning whoſe ſituations antiquaries have been much perplexed. They are all the ſame people. Camden diſcovered ſome traces of them in many different and diſtant places, as in Somerſetſhire, Wales, Derbyſhire, and Cheſhire; and he might have found as plain veſtiges of them in Devonſhire, Dorſetſhire, Eſſex, Wiltſhire, &c. Mr Horſley and others are no leſs perplexed and undetermined in their opinions on this ſubject. But Mr Baxter ſeems to have diſcovered the true cauſe of all this perplexity, by obſerving that the Cangi or Ceangi were not a diſtinct nation ſeated in one particular place, but ſuch of the youth of many different nations as were employed in paſturage, in feeding the flocks and herds of their reſpective tribes. Almoſt all the ancient nations of Britain had their ceangi, their paſtoritia pubes, the keepers of their flocks and herds, who ranged about the country in great numbers, as they were invited by the ſeaſon and plenty of paſture for their cattle. This is the reaſon that veſtiges of their name are to be found in ſo many different parts of Britain; but chiefly in thoſe parts which are moſt fit for paſturage. Theſe ceangi of the different Britiſh nations, naturally brave, and rendered ſtill more hardy by their way of life, were conſtantly armed for the protection of their flocks from wild beaſts; and theſe arms they occaſionally employed in the defence of their country and their liberty.

CANGIAGIO, or Cambiasi, Ludovico, one of the moſt eminent of the Genoeſe painters, was born in 1527. His works at Genoa are very numerous; and he was employed by the king of Spain to adorn part of the Eſcurial. It is remarked of him, that he was not only a moſt expeditious and rapid painter, but alſo that he worked equally well with both hands; and by that unuſual power he executed more deſigns, and finiſhed more grand works with his own pencils, in a much ſhorter time, than moſt other artiſts could do with ſeveral aſſiſtants. He died in 1685.

In the royal collection at Paris there is a Sleeping Cupid, as large as life, and likewiſe Judith with her attendant, which are painted by Cangiagio, and are an honour to that maſter. And in the Pembroke collection at Wilton is a picture, reputed the work of Cangiagio, repreſenting Chriſt bearing his croſs.

Canicula || Canine.

CANICULA, is a name proper to one of the ſtars of the conſtellation *canis major*, called alſo ſimply the *dog ſtar*; by the Greeks *σειριος*, *Sirius*, Canicula is the tenth in order in the Britannic catalogue; in Tycho's and Ptolemy's it is the ſecond. It is ſituated in the mouth of the conſtellation; and is of the firſt magnitude, being the largeſt and brighteſt of all the ſtars in the heavens. From the riſing of this ſtar not coſmically, or with the ſun, but heliacally, that is, its emerſion from the ſun's rays, which now happens about the 15th day of Auguſt, the ancients reckoned their *dies caniculares*, or dog days. The Egyptians and Ethiopians began their year at the riſing of the Canicula, reckoning to its riſe again the next year, which is called the *annus canarius*, or canicular year. This year conſiſted ordinarily of 365 days, and every fourth year of 366, by which it was accommodated to the civil year. The reaſon of their choice of the Canicula before the other ſtars to compute their time by, was not only the ſuperior brightneſs of that ſtar, but becauſe its heliacal riſing was in Egypt a time of ſingular note, as falling on the greateſt augmentation of the Nile, the reputed father of Egypt. Epheſtion adds, that from the aſpect and colour of Canicula, the Egyptians drew prognoſtics concerning the riſe of the Nile; and, according to Florus, predicted the future ſtate of the year; ſo that the firſt riſing of this ſtar was annually obſerved with great attention.

CANICULUM, or Caniculus, in the Byzantine antiquities, a golden ſtandiſh or ink veſſel, decorated with precious ſtones, wherein was kept the ſacred *encauſtum*, or red ink, wherewith the emperors ſigned their decrees, letters, &c. The word is by ſome derived from *canis*, or *caniculus*; alluding to the figure of a dog which it repreſented, or rather becauſe it was ſupported by the figures of dogs. The caniculum was under the care of a particular officer of ſtate.

CANINA, the north part of the ancient Epirus, a province of Greece, which now belongs to the Turks, and lies off the entrance of the gulf of Venice. The principal town is of the ſame name, and is ſeated on the ſea coaſt, at the foot of the mountains of Chimera. E. Long. 19. 25. N. Lat. 40. 55.

CANINANA, in *Zoology*, the name of a ſpecies of ſerpent found in America, and eſteemed one of the leſs poiſonous kinds. It grows to about two feet long; and is green on the back, and yellow on the belly. It feeds on eggs and ſmall birds; the natives cut off the head and tail, and eat the body as a delicate diſh.

CANINE, whatever partakes of, or has any relation to, the nature, of a dog.

Canine Appetite, amounts to much the ſame with Bulimy.

Canine Madneſs. See Medicine *Index*.

Canine || Cannabis.

Canine Teeth, are two ſharp-edged teeth in each jaw; one on each ſide, placed between the inciſores and molares.

CANINI, John Angelo and Marc Anthony, brothers and Romans, celebrated for their love of antiquities. John excelled in deſigns for engraving on ſtones, particularly heads; Marc engraved them. They were encouraged by Colbert to publiſh a ſucceſſion of heads of the heroes and great men of antiquity, deſigned from medals, antique ſtones, and other ancient remains; but John died at Rome ſoon after the work was begun: Marc Anthony, however, procured aſſiſtance, finiſhed and publiſhed it in Italian in 1669. The cuts of this edition were engraved by Canini, Picard, and Valet; and a curious explanation is given, which diſcovers the ſkill of the Caninis in hiſtory and mythology. The French edition of Amſterdam, in 1731, is ſpurious.

CANIS, or dog. See Mammalia *Index*.

Canis Major, the Great Dog, in *Aſtronomy*, a conſtellation of the ſouthern hemiſphere, below Orion's feet, though ſomewhat to the weſtward of him; whoſe ſtars Ptolemy makes 29; Tycho obſerved only 13; Hevelius 21; in the Britannic catalogue they are 31.

Canis Minor, the Little Dog, in *Aſtronomy*, a conſtellation of the northern hemiſphere; called alſo by the Greeks, *Procyon*, and by the Latins *Antecanis* and *Canicula*. The ſtars in the conſtellation Canis Minor, are in Ptolemy's catalogue, 2; in Tycho's, 5; in Hevelius's, 13; and in the Britiſh catalogue, 14.

CANISIUS, Henry, a native of Nimeguen, and one of the moſt learned men of his time, was profeſſor of canon law at Ingolſtadt; and wrote a great number of books; the principal of which are, 1. *Summa Juris Canonici*. 2. *Antiquæ Lectiones*, a very valuable work. He died in 1609.

CANITZ, the baron of, a German poet and ſtateſman, was of an ancient and illuſtrious family in Brandenburg, and born at Berlin in 1654, five months after his father's death. After his early ſtudies, he travelled to France, Italy, Holland, and England; and upon his return to his country, was charged with important negotiations by Frederic II. Frederic III. employed him alſo. Canitz united the ſtateſman with the poet; and was converſant in many languages, dead as well as living. His German poems were publiſhed for the tenth time, 1750, in 8vo. He is ſaid to have taken Horace for his model, and to have written purely and delicately. But he did not content himſelf with barely cultivating the fine arts in himſelf; he gave all the encouragement he could to them in others. He died at Berlin, in 1699, privy counſellor of ſtate, aged 45.

CANKER, a diſeaſe incident to trees, proceeding chiefly from the nature of the ſoil. It makes the bark rot and fall. If the canker be in a bough, cut it off; in a large bough, at ſome diſtance from the ſtem; in a ſmall one, cloſe to it: but for over hot ſtrong ground, the ground is to be cooled about the roots with pond mud and cow dung.

Canker, among farriers. See Farriery *Index*.

CANNA, Indian reed. See Botany *Index*.

CANNABIS, Hemp. See Botany *Index*.

From the leaves of hemp pounded and boiled in water, the natives of the Eaſt Indies prepare an intoxicating liquor of which they are very fond. The plant, when freſh, has a rank narcotic ſmell; the water in which the ſtalks are ſoaked, in order to ſeparate the tough rind for mechanic uſes, is ſaid to be violently poiſonous, and to produce is effects almoſt as ſoon as drank. The ſeeds alſo have ſome ſmell of the herb, and their taſte is unctuous and ſweetiſh: they are recommended, boiled in milk, or triturated with water into an emulſion, againſt coughs, heat of urine, and the like. They are alſo ſaid to be uſeful in incontinence of urine, and for reſtraining venereal appetites; but experience does not warrant their having any virtues of that kind.

Cannæ.

CANNÆ, in *Ancient Geography*, a town of Apulia on the Adriatic, at the mouth of the river Auſidus, rendered famous by a terrible overthrow which the Romans here received from the Carthaginians under Hannibal. The Roman conſuls Æmilius Paulus and Terentius Varro, being authorized by the ſenate to quit the defenſive plan, and ſtake the fortunes of the republic on the chance of a battle, marched from Canuſium, and encamped a few miles eaſt, in two unequal diviſions, with the Auſidus between them. In this poſition they meant to wait for an opportunity of engaging to advantage; but Hannibal, whoſe critical ſituation in a deſolated country, without refuge or allies, could admit of no delay, found means to inflame the vanity of Varro by ſome trivial advantages in ſkirmiſhes between the light horſe. The Roman, elated with this ſucceſs, determined to bring matters to a ſpeedy concluſion; but, finding the ground on the ſouth ſide too confined for the operations of ſo large an army, croſſed the river; and Varro, reſting his right wing upon the Auſidus, drew out his forces in the plain. Hannibal, whoſe head quarters were at Cannæ, no ſooner perceived the enemy in motion, than he forded the water below, and marſhalled his troops in a line oppoſite to that of his adverſaries.

The Romans were vaſtly ſuperior in number to the Carthaginians; but the latter were ſuperior in cavalry. The army of the former, conſiſting of 87,000 men, was drawn up in the uſual manner; the *haſtati* in the firſt line, the *principes* in the ſecond, and the *triarii* in the third. The cavalry were poſted on the wings.—On the right, the Roman knights flanked the legionaries; on the left, the cavalry of the allies covered their own infantry. The two conſuls commanded the two wings, Æmilius the right, and Terentius the left; and the two proconſuls, Servilius and Attilius, the main body. On the other hand, Hannibal, whoſe army conſiſted of 40,000 foot and 10,000 horſe, placed his Gauliſh and Spaniſh cavalry in his left wing, to face the Roman knights; and the Numidian horſe in his right, over againſt the cavalry of the allies of Rome. As to his infantry, he divided the African battalions into two bodies; one of which he poſted near the Gauliſh and Spaniſh horſe, the other near the Numidian. Between theſe two bodies were placed on one ſide the Gauliſh, on the other the Spaniſh infantry, drawn up in ſuch a manner as to form an obtuſe angle projecting a conſiderable way beyond the two wings. Behind this line he drew up a ſecond which had no projection. Aſdrubal commanded the left wing; Maherbal the right; and Hannibal himſelf, with his brother

Mago,

Cannæ. Mago, the main body. He had alſo taken care to poſt himſelf in ſuch a manner, that the wind *Vulturnus*, which riſes at certain ſtated times, ſhould blow directly in the faces of the Romans during the fight, and cover them with duſt. The onſet was begun by the light-armed infantry; the Romans diſcharging their javelins, and the *baleares* their ſtones, with pretty equal ſucceſs; nevertheleſs, the conſul Æmilius was wounded. —Then the Roman cavalry in the right wing advanced againſt the Gauliſh and Spaniſh in Hannibal's left. As they were ſhut in by the river Aufidus on one ſide, and by their infantry on the other, they did not fight, as uſual, by charging and wheeling off, and then returning to the charge; but continued fighting each man againſt his adverſary, till one of them was killed or retired. After they had made prodigious efforts on both ſides to overbear each other, they all on a ſudden diſmounted, and fought on foot with great fury. In this attack the Gauls and Spaniards ſoon prevailed; put the Romans to the route; and, purſuing them along the river, ſtrewed the ground with their dead bodies, Aſdrubal giving no quarter. This action was ſcarce over, when the infantry on both ſides advanced. The Romans firſt fell upon the Spaniards and Gauls, who, as already obſerved, formed a kind of triangle projecting beyond the two wings. Theſe gave ground, and, purſuant to Hannibal's directions, ſunk into the void ſpace in their rear; by which means they inſenſibly brought the Romans into the centre of the African infantry, and then the fugitives rallying, attacked them in front, while the Africans charged them in both flanks. The Romans being, by this artful retreat drawn into the ſnare and ſurrounded, no longer kept their ranks, but formed ſeveral platoons in order to face every way. Æmilius, who was on the right wing, ſeeing the danger of the main body, at the head of his legionaries acted the part both of a ſoldier and general, penetrating into the heart of the enemy's battalions, and cutting great numbers of them in pieces. All the Roman cavalry that were left, attended the brave conſul on foot; and, encouraged by his example, fought like men in deſpair. But, in the mean time, Aſdrubal, at the head of a detachment of Gauliſh and Spaniſh infantry brought from the centre, attacked Æmilius's legionaries with ſuch fury, that they were forced to give ground and fly: the conſul being all covered with wounds, was at laſt killed by ſome of the enemy who did not know him. In the main body, the Romans, though inveſted on all ſides, continued to ſell their lives dear; fighting in platoons, and making a great ſlaughter of the enemy. But being at length overpowered, and diſheartened by the death of the two proconſuls, Servilius and Attilius, who headed them, they diſperſed and fled, ſome to the right, and others to the left, as they could find opportunity; but the Numidian horſe cut moſt of them in pieces: the whole plain was covered with heaps of dead bodies, inſomuch that Hannibal himſelf, thinking the butchery too terrible, ordered his men to put a ſtop to it.—There is a great diſagreement among authors as to the number of Romans killed and taken at the battle of Cannæ. According to Livy, the republic loſt 50,000 men, including the auxiliaries. According to Polybius, of 6000 Roman horſe, only 70 eſcaped to Venuſia with Terentius Varro, and 300 of the auxiliary horſe. As to the infantry, that writer tells us, that 70,000 of the Roman foot died on the field of battle fighting like brave men; and that 13,000 were made priſoners. According to Dionyſius of Halicarnaſſus, of 6000 horſe, only 370 eſcaped the general ſlaughter, and of 80,000 foot, 3000 only were left. The moſt moderate computation makes the number of Romans killed to amount to 45,000. The ſcene of action is marked out to poſterity, by the name of *Pezzo di Sangue*, "Field of Blood." Cannæ ‖ Cannon.

Theſe plains have more than once, ſince the Punic war, afforded room for men to accompliſh their mutual deſtruction. Melo of Bari, after raiſing the ſtandard of revolt againſt the Greek emperors, and defeating their generals in ſeveral engagements, was at laſt routed here in 1019, by the Catapan Bolanus. Out of 250 Norman adventurers, the flower of Melo's army, only ten eſcaped the ſlaughter of the day. In 1201, the archbiſhop of Palermo and his rebellious aſſociates, who had taken advantage of the nonage of Frederick of Swabia, were cut to pieces at Cannæ by Walter de Brienne, ſent by the Pope to defend the young king's dominions.

The traces of the town of Cannæ are very faint, conſiſting of fragments of altars, cornices, gates, walls, vaults, and under-ground granaries. It was deſtroyed the year before the battle: but being rebuilt, became an epiſcopal ſee in the infancy of Chriſtianity. It was again ruined in the ſixth century, but ſeems to have ſubſiſted in a humble ſtate many ages later; for we read of its contending with Barletta for the territory, which till then had been enjoyed in common by them; and in 1284, Charles I. iſſued an edict for dividing the lands, to prevent all future litigation. The proſperity of the towns along the coaſt, which increaſed in wealth and population by embarkations for the cruſades and by traffic, proved the annihilation of the great inland cities; and Cannæ was probably abandoned entirely before the end of the thirteenth century.

CANNEQUINS, in commerce, white cotton cloths brought from the Eaſt Indies. They are a proper commodity for trading on the coaſt of Guinea, particularly about the rivers Senegal and Gambia. Theſe linens are folded ſquare-wiſe, and are about eight ells long.

CANNEL COAL. See MINERALOGY *Index*.

CANNES, a town of France, in Provence, and in the viguerie of Graſſe, ſeated on the coaſt of the Mediterranean ſea, with a harbour and a caſtle. E. Long. 7. 7. N. Lat. 43. 34.

CANNIBAL, a modern term for an anthropophagus or man-eater, more eſpecially in the Weſt Indies. See ANTHROPOPHAGI.

CANNON, a military engine for throwing balls, &c. by the help of GUNPOWDER.

The invention of braſs cannon is by Laney aſcribed to J. Owen: he ſays, that they were firſt known in England in the year 1535; but yet acknowledges, that, in 1346, there were four pieces of cannon in the Engliſh army at the battle of Creſſy, and that theſe were the firſt that were known in France. And Mezeray relates, that King Edward, by five or ſix pieces of cannon, ſtruck terror into the French army, it being the firſt time they had ſeen any of theſe thundering

Cannon || Cano

ing machines; though others affirm that cannon were known alſo in France at the ſame time; but that the French king, in his hurry to attack the Engliſh, and in confidence of victory, left all his cannon behind him as uſeleſs encumbrances (See ARTILLERY). The Germans carry the invention farther back, and attribute it to Albertus Magnus, a Dominican monk, about the year 1250. Voſſius rejects all theſe opinions, and finds cannon in China almoſt 1700 years ago. According to him, they were mounted by the emperor Kitey in the year of Chriſt 85. For further particulars of their hiſtory, &c. ſee GUN and GUNNERY.

For the caſting of cannon, ſee FOUNDERY. For their different parts, proportions, management, operation, and effects, ſee GUNNERY.

CANNON, with letter founders and printers, the name of the largeſt ſize of letters they uſe.

CANNONADE, the application of artillery to the purpoſes of war, or the direction of its efforts againſt ſome diſtant object intended to be ſeized or deſtroyed, as a ſhip, battery, or fortreſs. See GUNNERY.

Since a large ſhip of war may be conſidered as a combination of floating batteries, it is evident that the efforts of her artillery muſt be greatly ſuperior to thoſe of a fortreſs on the ſea coaſt; that is to ſay, in general; becauſe, on ſome particular occaſions, her ſituation may be extremely dangerous, and her cannonading ineffectual. Her ſuperiority conſiſts in ſeveral circumſtances, as the power of bringing her different batteries to converge to one point; of ſhifting the line of her attack ſo as to do the greateſt poſſible execution againſt the enemy, or to lie where ſhe will be the leaſt expoſed to his ſhot; and chiefly becauſe, by employing a much greater number of cannon againſt a fort than it can poſſibly return, the impreſſion of her artillery againſt ſtone walls ſoon becomes deciſive and irreſiſtible. Beſides theſe advantages in the attack, ſhe is alſo greatly ſuperior in point of defence: becauſe the cannon ſhot, paſſing with rapidity through her ſides ſeldom do any execution out of the line of their flight, or occaſion much miſchief by their ſplinters; whereas they very ſoon ſhatter and deſtroy the faces of a parapet, and produce incredible havock among the men by the fragments of the ſtones, &c. A ſhip may alſo retreat when ſhe finds it too dangerous to remain longer expoſed to the enemy's fire, or when her own fire cannot produce the deſired effect. Finally, The fluctuating ſituation of a ſhip, and of the element on which ſhe reſts, renders the effects of bombs very uncertain, and altogether deſtroys the effect of the *ricochet*, or rolling and bounding ſhot, which is ſo pernicious and deſtructive in a fortreſs or land engagement. The chief inconveniency to which a ſhip is expoſed, on the contrary, is, that the low-laid cannon in a fort near the brink of the ſea, may ſtrike her repeatedly on or under the ſurface of the water, ſo as to ſink her before her cannonade can have any conſiderable efficacy.

CANO, a kingdom of Africa, in Negroland, with a town of the ſame name. It is bounded by Zaara on the north, by the river Niger on the ſouth, the kingdom of Agades on the weſt, and that of Caſſina on the eaſt. Some of the inhabitants are herdſmen, and others till the ground and dwell in villages. It produces corn, rice, and cotton. Here are alſo many deſerts, and mountains covered with woods, in which are wild citrons and lemon trees. The walls and houſes of the town are made of clay, and the principal inhabitants are merchants. E. Long. 16. 18. N. Lat. 21. 5.

Canobia || Canon.

CANOBIA, a town of Italy, in the duchy of Milan, ſeated on the weſtern bank of Lago Maggiore, or the Greater Lake. E. Long. 8. 47. N. Lat. 45. 55.

CANOE, a ſort of Indian boat or veſſel, formed of the trunk of a tree hollowed, and ſometimes of ſeveral pieces of the bark put together.

Canoes are of various ſizes, according to the uſes for which they may be deſigned, or the countries wherein they are formed. The largeſt are made of the cotton tree; ſome of them will carry between 20 and 30 hogſheads of ſugar or molaſſes. Some are made to carry ſail: and for this purpoſe are ſteeped in water till they become pliant; after which their ſides are extended, and ſtrong beams placed between them, on which a deck is afterwards laid that ſerves to ſupport their ſides. The other ſorts very rarely carry ſail, unleſs when going before the wind: their ſails are made of a ſort of ſhort ſilk graſs or ruſhes. They are commonly rowed with paddles, which are pieces of light wood ſomewhat reſembling a corn ſhovel; and, inſtead of rowing with it horizontally like an oar, they manage it perpendicularly. The ſmall canoes are very narrow, having only room for one perſon in breadth, and ſeven or eight lengthwiſe. The rowers, who are generally American ſavages, are very expert in managing their paddles uniformly, and in balancing the canoes with their bodies; which would be difficult for a ſtranger to do, how well accuſtomed ſoever to the conducting of European boats, becauſe the canoes are extremely light, and liable to be overturned. The American Indians, when they are under the neceſſity of landing to avoid a water fall, or of croſſing the land from one river to another, carry their canoes on their heads, till they arrive at a place where they can launch them again. This is the general conſtruction of canoes, and method of managing them: but ſome nations have veſſels going under the name of canoes, which differ conſiderably from the above; as the inhabitants of Greenland, Hudſon's bay, Otaheite, &c.

CANON, a perſon who poſſeſſes a prebend, or revenue allotted for the performance of divine ſervice, in a cathedral, or collegiate church.

Canons are of no great antiquity: Paſchier obſerves, that the name canon was not known before Charlemagne; at leaſt the firſt we hear of are in Gregory de Tours, who mentions a college of canons inſtituted by Baldwin XVI. archbiſhop of that city, in the time of Clotharius I. The common opinion attributes the inſtitution of this order to Chrodegangus, biſhop of Metz, about the middle of the eighth century.

Originally canons were only prieſts, or inferior eccleſiaſtics, who lived in community; reſiding by the cathedral church, to aſſiſt the biſhop; depending entirely on his will; ſupported by the revenues of the biſhopric; and living in the ſame houſe, as his domeſtics, or counſellors, &c. They even inherited his moveables, till the year 817, when this was prohibited by the council of Aix-la-Chapelle, and a new rule ſubſtituted

Canons. ſtituted in the place of that which had been appointed by Chrodegangus, and which was obſerved for the moſt part in the weſt till the 12th century. By degrees, theſe communities of prieſts, ſhaking off their dependence, formed ſeparate bodies; whereof the biſhops, however, were ſtill heads. In the tenth century, there were communities or congregations of the ſame kind, eſtabliſhed even in cities where there were no biſhops: theſe were called collegiates, as they uſed the terms congregation and college indifferently: the name chapter, now given to theſe bodies, being much more modern. Under the ſecond race of the French kings, the canonical, or collegiate life, had ſpread itſelf all over the country; and each cathedral had its chapter, diſtinct from the reſt of the clergy. They had the name canon from the Greek κανων, which ſignifies three different things; a rule, a penſion or fixed revenue to live on, and a catalogue or matricula; all which are applicable to them.

In time, the canons freed themſelves from their rules, the obſervance relaxed, and, at length, they ceaſed to live in community: yet they ſtill formed bodies; pretending to other functions beſides the celebration of the common office in the church; yet aſſuming the rights of the reſt of the clergy: making themſelves as a neceſſary council of the biſhop; taking upon them the adminiſtration of a ſee during a vacancy, and the election of a biſhop to ſupply it. There are even ſome chapters exempt from the juriſdiction of the biſhop, and owning no head but their dean. After the example of cathedral chapters, collegiate ones alſo continued to form bodies, after they had abandoned living in community.

Canons are of various kinds; as,

Cardinal Canons, which are thoſe attached, and, as the Latins call it, *incardinati* to a church, as a prieſt is to a pariſh.

Domicellary Canons, were young canons, who not being in orders, had no right in any particular chapters.

Expectative Canons, were ſuch as, without having any revenue or prebend, had the title and dignities of canons, a voice in the chapter, and a place in the choir; till ſuch time as a prebend ſhould fall.

Foreign Canons, were ſuch as did not officiate in the canonries to which they belonged. To theſe were oppoſed manſionary canons, or canons reſidentiary.

Lay or *honorary* Canons, are ſuch among the laity as have been admitted, out of honour and reſpect, into ſome chapter of canons.

Regular Canons, are canons that ſtill live in community; and who, like religious, have, in proceſs of time, to the practice of their rules, added the ſolemn profeſſion of vows. They are called regulars, to diſtinguiſh them from thoſe ſecular canons who abandon living in community, and at the ſame time the obſervance of the canons made as the rule of the clergy, for the maintenance of the ancient diſcipline. The canons ſubſiſted in their ſimplicity till the eleventh, ſome ſay the twelfth century, when ſome of them, ſeparating from the community, took with them the name of canons, or acephalous prieſts, becauſe they declined to live in community with the biſhop; and thoſe who were left thenceforth acquired the denomination of canons regular, and adopted moſt of the profeſſions of the rule of St Auguſtine. This order of regular canons of St Auguſtine was brought into England by Adelwald, confeſſor to Henry I. who erected a priory at Noſtel in Yorkſhire; and obtained for them the church of Carliſle as an epiſcopal ſee, with the privilege of chooſing their own biſhop. They were ſingularly protected and encouraged by Henry I. who gave them the priory of Dunſtable in 1107, and by Queen Maud, who, in the following year, gave them the priory of the Holy Trinity in London. It appears, that under the reign of Edward I. they had fifty-three priories. Canons.

Tertiary Canons, thoſe who had only the third part of the revenues of the canonicate.

Canon, in an eccleſiaſtical ſenſe, is a law or rule, either of doctrine or diſcipline, enacted eſpecially by a council, and confirmed by the authority of the ſovereign.

Canons are properly deciſions of matters of religion; or regulations of the policy and diſcipline of a church, made by councils, either general, national, or provincial. Such are the canons of the council of Nice, or Trent, &c.

There have been various collections of the canons of the eaſtern councils; but four principal ones, each ampler than the preceding. The firſt, according to Uſher, A. D. 380, containing only thoſe of the firſt ecumenical council, and the firſt provincial ones: they were but 164 in number. To theſe, Dionyſius Exiguus, in the year 520, added the 50 canons of the apoſtles, and thoſe of the other general councils. The Greek canons in this ſecond collection end with thoſe of the council of Chalcedon; to which are ſubjoined thoſe of the council of Sardica, and the African councils. The fourth and laſt collection comes down as low as the ſecond council of Nice; and it is on this that Balſamon and Zonaras have commented.

Apoſtolical Canons, are thoſe which have been uſually aſcribed to St Clement. Bellarmin, Baronius, &c. will have them to be genuine canons of the apoſtles: Cotelerius obſerves, that they cannot be aſcribed to the apoſtles or Clement, becauſe they are not received with other books of Scripture, are not quoted by the writers of the firſt ages, and contain many things not agreeable to the apoſtolical times: Hincmar, De Marca, Beveridge, &c. take them to be framed by the biſhops who were the apoſtles diſciples in the ſecond or third century; S. Baſnage is of opinion, that they were collected by an anonymous writer in the fifth century; but Daille, &c. maintain them to have been forged by ſome heretic in the ſixth century; and S. Baſnage conjectures, that ſome of them are ancient, and others not older than the ſeventh century. The Greek church allows only 85 of them, and the Latins only 50; though there are 84 in the edition given of them in the Corpus Juris Canonici.

Canon is alſo uſed for the authorized catalogue of the ſacred writings. See Bible.

The ancient canon, or catalogue of the books of the Old Teſtament, was made by the Jews, and is ordinarily attributed to Ezra; who is ſaid to have diſtributed them into the law, the prophets, and the hagiographa, to which our Saviour refers, Luke, chap. xxiv. ver. 44. The ſame diviſion is alſo mentioned by Joſephus, cont. Appion.

Canon. This is the canon allowed to have been followed by the primitive church, till the council of Carthage; and, according to St Jerome, this conſiſted of no more than 22 books; anſwering to the number of the Hebrew alphabet; though at preſent they are claſſed into 24 diviſions, containing Geneſis, Exodus, Leviticus, Numbers, Deuteronomy, Joſhua, Judges, Samuel, Kings, Iſaiah, Jeremiah, Ezekiel, the twelve minor prophets, the Pſalms, the Proverbs, Job, Canticles, Ruth, Lamentations, Eccleſiaſtes, Eſther, Daniel, Ezra, comprehending the book of Nehemiah and the Chronicles. However, this order is not univerſally obſerved either among Jews or Chriſtians: nor were all the books above enumerated admitted into the canon in Ezra's time. It is moſt likely, ſays Dr Prideaux, that the two books of Chronicles, Ezra, Nehemiah, Eſther, and Malachi, were added in the time of Simon the Juſt, when the canon was completed. But that council enlarged the canon very conſiderably, taking into it the books which we call apocryphal: which the council of Trent has further enforced, enjoining all theſe to be received as books of Holy Scripture, upon pain of anathema, and being attainted of hereſy. The Romaniſts, in defence of this canon, ſay, that it is the ſame with that of the council of Hippo, held in 393; and with that of the third council of Carthage, in 397, at which were preſent 46 biſhops, and, among the reſt, St Auguſtine; who declared that they received it from their fathers.

Their canon of the New Teſtament perfectly agrees with ours. It conſiſts of books that are well known; ſome of which have been univerſally acknowledged; ſuch are the four Goſpels, the Acts of the Apoſtles, thirteen Epiſtles of St Paul, one Epiſtle of St Peter, and one Epiſtle of St John; and others, concerning which doubts were entertained, but which were afterwards received as genuine; ſuch are the epiſtle to the Hebrews, that of James, the ſecond of Peter, the ſecond and third of John, that of Jude, and the Revelation. Theſe books were written at different times; and they are authenticated, not by the decrees of councils, or infallible authority, but by ſuch kind of evidence as is thought ſufficient in the caſe of any other ancient writings. They were very extenſively diffuſed; they were read in every Chriſtian ſociety; they were valued and preſerved with care by the firſt Chriſtians; they were cited by Chriſtian writers of the ſecond, third, and fourth century, as by Irenæus, Clement the Alexandrian, Tertullian, Origen, Euſebius, &c. and their genuineneſs is proved by the teſtimony of thoſe who were contemporary with the apoſtles themſelves, and by tradition. The four Goſpels, and moſt of the other books of the New Teſtament, were collected either by one of the apoſtles, or ſome of their diſciples and ſucceſſors, before the end of the firſt century. The catalogue of canonical books furniſhed by the more ancient Chriſtian writers, as Origen about the year 210, Euſebius and Athanaſius in 315, Epiphanius in 370, Jerome in 382, Auſtin in 394, and many others, agrees with that which is now received among Chriſtians. For the time of writing the ſeveral books of the New Teſtament, ſee the titles of the books themſelves; as the Goſpel of St MATTHEW, MARK, &c.

Some of the fathers diſtinguiſh the inſpired writings into three claſſes; proto-canonical, deutero-canonical, and apocryphal. Canon.

Paſchal CANON, a table of the moveable feaſts, ſhowing the day of Eaſter, and the other feaſts depending on it, for a cycle of 19 years.

The paſchal canon is ſuppoſed to be the calculation of Euſebius of Cæſarea, and to have been done by order of the council of Nice.

CANON, in monaſtic orders, a book wherein the religious of every convent have a fair tranſcript of the rules of their order, frequently read among them as their local ſtatutes. This is alſo called *regula*, as containing the rule and inſtitution of their order.

The canon differs from the miſſale, martyrologium, and necrologium.

CANON, again, is uſed for the catalogue of ſaints acknowledged and canonized in the Roman church.

CANON is alſo uſed, by way of excellence, in the Romiſh church, for the ſecret words of the maſs, from the preface to the *Pater*; in the middle of which the prieſt conſecrates the hoſt. The common opinion is, that the canon of the maſs commences with *Te igitur*, &c. The people are to be on their knees, hearing the canon; and are to rehearſe it to themſelves, ſo as not to be heard.

CANON, in the ancient muſic, is a rule or method of determining the intervals of notes.

Ptolemy, rejecting the Ariſtoxenian way of meaſuring the intervals in muſic, by the magnitude of a tone (which was ſuppoſed to be formed by the difference between a diapente and a diateſſaron), thought that muſical intervals ſhould be diſtinguiſhed, according to the ratios or proportions which the ſounds terminating thoſe intervals bear to one another, when conſidered according to their degree of acuteneſs or gravity; which, before Ariſtoxenus, was the old Pythagorean way. He therefore made the diapaſon conſiſt in a double ratio; the diapente, in a ſeſquialterate; the diateſſaron, in a ſeſquitertian; and the tone itſelf, in a ſeſquioctave; and all the other intervals, according to the proportion of the ſounds that terminate them: wherefore taking the canon (as it is called) for a determinate line of any length, he ſhows how this canon is to be cut accordingly, ſo that it may repreſent the reſpective intervals: and this method anſwers exactly to experiment, in the different lengths of muſical chords. From this canon, Ptolemy and his followers have been called *Canonici*; as thoſe of Ariſtoxenus were called *Muſici*.

CANON, in modern muſic, is a kind of fugue, which they call a *perpetual fugue*, becauſe the different parts beginning one after another, repeat inceſſantly the ſame air.

Formerly, ſays Zarlino, they placed, at the head of perpetual fugues, particular directions which ſhowed how this kind of fugues was to be ſung; and theſe directions being properly the rules by which perpetual fugues were compoſed were called *canoni*, *rules* or *canons*. From this cuſtom, others taking the title for the thing ſignified, by a metonymy, termed this kind of compoſition *canon*. Such canons as are compoſed with the greateſt facility, and of conſequence moſt generally uſed, begin the fugue either with the octave or the uniſon; that is to ſay, that every part repeats in the ſame tone the melody of the preceding. In order to form Canon.

Canon. form a canon of this kind, it is only neceſſary for the compoſer to make an air according to his taſte; to add in ſcore as many parts as he chooſes, where the voices in octave or uniform repeat the ſame melody; then forming a ſingle air from all theſe parts ſucceſſively executed, to try whether this ſucceſſion may form an entire piece which will give pleaſure, as well in the harmony as the melody.

In order to execute ſuch a *canon*, he who ſings the firſt part begins alone, and continues till the air is finiſhed; then recommences immediately, without any ſuſpenſe of ſound or interruption of time; as ſoon as he has ended the firſt couplet, which ought to ſerve for the perpetual ſubject upon which the whole *canon* has been compoſed, the ſecond part begins and repeats the ſame couplet, whilſt the firſt who had begun purſues the ſecond: others in ſucceſſion begin, and proceed the ſame way, as ſoon as he who precedes has reached the end of the firſt couplet. Thus, by inceſſantly recommencing, an univerſal cloſe can never be found, and the *canon* may be repeated as long as the fingers pleaſe.

A perpetual fugue may likewiſe conſiſt of parts which begin with the intervals of a fourth or fifth; or, in other words, every part may repeat the melody of the firſt, a fourth or a fifth higher or lower. It is then neceſſary that the whole *canon* ſhould be invented *di prima intenzione*, as the Italians ſay; and that ſharps or flats ſhould be added to the notes, whoſe natural gradations do not anſwer exactly, by a fourth or fifth, to the melody of the preceding part, and produce the ſame intervals with itſelf. Here the compoſer cannot pay the leaſt regard to modulation; his only care is, that the melody may be the ſame, which renders the formation of a *canon* more difficult; for at every time when any part reſumes the fugue, it takes a new key; it changes the tone almoſt at every note, and what is ſtill worſe, no part is at the ſame time found in the ſame tone with another; hence it is that this kind of *canons*, in other reſpects far from being eaſy to be peruſed, never produces a pleaſing effect, however good the harmony may be, and however properly it may be ſung.

There is a third kind of *canon*, but very ſcarce, as well becauſe it is extremely difficult, as becauſe it is for the moſt part incapable of giving pleaſure, and can boaſt no other merit but the pains which have been thrown away in its compoſition. This may be called a *double canon inverted*, as well by the inverſions which are practiſed in it with reſpect to the melody of the parts, as by thoſe which are found among the parts themſelves in ſinging. There is ſuch an artifice in this kind of *canon*, that, whether the parts be ſung in their natural order, or whether the paper in which they are ſet be turned the contrary way, to ſing them backward from the end to the beginning, in ſuch a manner that the baſs becomes the upper part, and the reſt undergo a ſimilar change, ſtill you have pretty harmony, and ſtill a regular *canon*. The reader may conſult Rouſſeau's Dictionary in this article, where he is referred to Plate D. fig. 11. for two examples of canons of this ſort extracted from Bontempi, who likewiſe gives rules for their compoſition. But he adds, that the true principle from which this rule is deduced will be found at the word *Syſteme*, in his account of the ſyſtem of Tartini, to which we muſt likewiſe once more refer the reader; as a quotation of ſuch length muſt have protracted our article to an enormous extent. Canon.

To form a *canon* in which the harmony may be a little varied, it is neceſſary that the parts ſhould not follow each other in a ſucceſſion too rapid, and that the one ſhould only begin a conſiderable time after the other. When they follow one another ſo immediately as at the diſtance of a ſemibreve or a minim, the duration is not ſufficient to admit a great number of chords, and the canon muſt of neceſſity exhibit a diſagreeable monotony; but it is a method of compoſing, without much difficulty, a canon in as many parts as the compoſer chooſes. For a *canon* of four bars only, will conſiſt of eight parts if they follow each other at the diſtance of half a bar; and by each bar which is added, two parts will conſtantly be gained.

The emperor Charles VI. who was a great muſician, and compoſed extremely well, took much pleaſure in compoſing and ſinging *canons*. Italy is ſtill replete with moſt beautiful *canons* compoſed for this prince, by the beſt maſters in that country. To what has been ſaid by Rouſſeau, we need only ſubjoin, that the Engliſh *catch* and the Italian *canon* are much the ſame; as any intelligent reader may perceive, from comparing the ſtructure and execution of the Engliſh *catch* with the account of *canons* which has now been given.

Canon, in *Geometry* and *Algebra*, a general rule for the ſolution of all caſes of a like nature with the preſent inquiry. Thus every laſt ſtep of an equation is a canon; and, if turned into words, becomes a rule to ſolve all queſtions of the ſame nature with that propoſed.

Canon Law, a collection of eccleſiaſtical laws, ſerving as the rule and meaſure of church government.

The power of making laws was exerciſed by the church before the Roman empire became Chriſtian. The canon law that obtained throughout the weſt, till the 12th century, was the collection of canons made by Dionyſius Exiguus in 520, the capitularies of Charlemagne, and the decrees of the popes from Sircius to Anaſtaſius.

The canon law, even when papal authority was at its height in England, was of no force when it was found to contradict the prerogative of the king, the laws, ſtatutes and cuſtoms of the realm, or the doctrine of the eſtabliſhed church.

The eccleſiaſtical juriſdiction of the ſee of Rome in England was founded on the canon law; and this created quarrels between kings and ſeveral archbiſhops and prelates who adhered to the papal uſurpation.

Beſides the foreign canons, there were ſeveral laws and conſtitutions made here for the government of the church: but all theſe received their force from the royal aſſent; and if, at any time, the eccleſiaſtical courts did, by their ſentence, endeavour to enforce obedience to ſuch canons, the courts at common law, upon complaints made, would grant prohibition. The authority veſted in the church of England of making canons, was aſcertained by a ſtatute of Henry VIII. commonly called the *act of the clergy's ſubmiſſion*; by which they acknowledged, that the convocation had always been aſſembled by the king's writ; ſo that though

Canoneſs || Canonical puniſhments.

though the power of making canons reſided in the clergy met in convocation, their force was derived from the authority of the king's aſſenting to and confirming them.

The old canons continued in full force till the reign of James I. when the clergy being aſſembled in convocation, the king gave them leave to treat and conſult upon canons; which they did, and preſented them to the king, who gave them the royal aſſent: theſe were a collection out of the ſeveral preceding canons and injunctions. Some of theſe canons are now obſolete. In the reign of Charles I. ſeveral canons were paſſed by the clergy in convocation.

CANONESS, in the Romiſh church, a woman who enjoys a prebend, affixed, by the foundation, to maids, without their being obliged to renounce the world or make any vows.

CANONICA, in philoſophical hiſtory, an appellation given by Epicurus to his doctrine of logic. It was called *canonica*, as conſiſting of a few canons or rules for directing the underſtanding in the purſuit and knowledge of truth. Epicurus's *canonica* is repreſented as a very ſlight and inſufficient logic by ſeveral of the ancients, who put a great value on his ethics and phyſics. Laertius even aſſures us, that the Epicureans rejected logic as a ſuperfluous ſcience; and Plutarch complains that Epicurus made an unſkilful and prepoſterous uſe of ſyllogiſms. But theſe cenſures ſeem too ſevere. Epicurus was not averſe to the ſtudy of logic, but even gave better rules in this art than thoſe philoſophers who aimed at no glory but that of logics. He only ſeems to have rejected the dialectics of the Stoics, as full of vain ſubtleties and deceits, and fitted rather for parade and diſputation than real uſe. The ſtreſs of Epicurus's *canonica* conſiſts in his doctrine of the criteria of truth. All queſtions in philoſophy are either concerning words or things: concerning things, we ſeek their truth; concerning words, their ſignification: things are either natural or moral; and the former are either perceived by ſenſe or by the underſtanding. Hence, according to Epicurus ariſe three criterions of truth, viz. ſenſe, anticipation or prænotion, and paſſion. The great canon or principle of Epicurus's logic is, that the ſenſes are never deceived; and therefore, that every ſenſation or perception of an appearance is true.

CANONICAL, ſomething that belongs to, or partakes of, the nature of a rule or canon.

Canonical Hours, are certain ſtated times of the day, conſigned, more eſpecially by the Romiſh church, to the offices of prayer and devotion. Such are *matins*, *lauds*, *ſixth*, *ninth veſpers*. In our country the canonical hours are from eight to twelve in the forenoon, before or after which marriage cannot be legally performed in any pariſh church.

Canonical Obedience, is that ſubmiſſion which, by the eccleſiaſtical laws, the inferior clergy are to pay to their biſhops, and religious to their ſuperiors.

Canonical Sins, in the ancient church, thoſe which were capital or mortal. Such eſpecially were idolatry, murder, adultery, hereſy, and ſchiſm.

Canonical Puniſhments, are thoſe which the church may inflict; ſuch as excommunication, degradation, and penance in Roman Catholic countries, alſo faſting, alms, whipping, &c.

Canonical Life, the method or rule of living preſcribed by the ancient clergy who lived in community. The canonical life was a kind of medium between the monaſtic and clerical lives. Originally the orders of monks and clerks were entirely diſtinct; but pious perſons, in proceſs of time, inſtituted colleges of prieſts and canons, where clerks brought up for the miniſtry, as well as others already engaged therein, might live under a fixed rule, which, though ſomewhat more eaſy than the monaſtic, was yet more reſtrained than the ſecular. This was called the *canonical life*, and thoſe who embraced it *canons*. Authors are divided about the founder of the canonical life. Some will have it to be founded by the apoſtles; others aſcribe it to Pope Urban I. about the year 1230, who is ſaid to have ordered biſhops to provide ſuch of their clergy as were willing to live in community, with neceſſaries out of the revenues of their churches. The generality attribute it to St Auguſtine; who, having gathered a number of clerks to devote themſelves to religion, inſtituted a monaſtery within the epiſcopal palace, where he lived in community with them. Onuphrius Panvinius brings the inſtitution ſomewhat lower; according to him, Pope Gelaſius I. about the year 495, placed the firſt regular canons of St Auguſtine in the Lateran church.

Canonical life || Canoniſt.

Canonical Letters, in the ancient church, were a ſort of teſtimonials of the orthodox faith, which the biſhops and clergy ſent each other to keep up the Catholic communion, and diſtinguiſh orthodox Chriſtians from Arians and other heretics. They were denominated *canonical*, either as being compoſed according to a certain rule or form, or becauſe they were given to the *canonici*, that is, thoſe comprehended in the canon or catalogue of their church. When they had occaſion to travel into other dioceſes or countries, dimiſſory and recommendatory letters, alſo letters of peace, &c. were ſo many ſpecies of canonical letters.

Canonical is alſo an appellation given to thoſe epiſtles in the New Teſtament more frequently called *catholic* or *general* epiſtles.

CANONICUM, in a general ſenſe, denotes a tax or tribute.

Canonicum, is more particularly uſed in the Greek church for a fee paid by the clergy to biſhops, archbiſhops, and metropolitans, for degrees and promotions.

Canonicum alſo denotes a due of firſt fruits, paid by the Greek laity to their biſhops, or, according to Du Cange, to their prieſts. The *canonicum* is aſſeſſed according to the number of houſes or chimneys in a place.

The emperor Iſaac Comnenus made a conſtitution for regulating the *canonicum* of biſhops, which was confirmed by another made in 1086, by his nephew Alexis Comnenus. A village containing thirty fires, was to pay for its *canonicum* one piece of gold, two of ſilver, one ſheep, ſix buſhels of barley, ſix of wheat flour, ſix meaſures of wine, and thirty hens.

CANONIST, a perſon ſkilled in or who makes profeſſion of the ſtudy and practice of the canon law. Canoniſts and civilians are uſually combined in the ſame perſons: and hence the title of *doctor juris utriuſque*, or *legum doctor*, uſually expreſſed in abbreviature, L. L. D. or J. U. D.

CANONIZATION,

Canonization || Canopus.

CANONIZATION, a ceremony in the Romiſh church, by which perſons deceaſed are ranked in the catalogue of the ſaints. It ſucceeds beatification.

Before a beatified perſon is canonized, the qualifications of the candidate are ſtrictly examined into, in ſome conſiſtories held for that purpoſe; after which, one of the conſiſtorial advocates, in the preſence of the pope and cardinals, makes the panegyric of the perſon who is to be proclaimed a ſaint, and gives a particular detail of his life and miracles: which done, the holy father decrees his canonization, and appoints the day.

On the day of canonization the pope officiates in white, and their eminences are dreſt in the ſame colour. St Peter's church is hung with rich tapeſtry, upon which the arms of the pope, and of the prince or ſtate requiring the canonization, are embroidered in gold and ſilver. An infinite number of lights blaze all round the church, which is crowded with pious ſouls, who wait with devout impatience till the new ſaint has made his public entry as it were into paradiſe, that they may offer up their petitions to him without danger of being rejected.

The following maxim with regard to canonization is now obſerved, though it has not been followed above a century, viz. not to enter into the inquiries prior to canonization, till 50 years, at leaſt, after the death of the perſon to be canonized. By the ceremony of canonization, it appears that this rite of the modern Romans has ſomething in it very like the apotheoſis or deification of the ancient Romans, and, in all probability, takes its riſe from it; at leaſt ſeveral ceremonies of the ſame nature are conſpicuous in both.

CANONRY, the benefice filled by a canon. It differs from a prebend, in that the prebend may ſubſiſt without the canonicate; whereas the canonicate is inſeparable from the prebend: again, the right of ſuffrages, and other privileges, are annexed to the canonicate, and not to the prebend.

CANOPUS, in *Aſtronomy*, a ſtar of the firſt magnitude in the rudder of Argo, a conſtellation of the ſouthern hemiſphere.

Canopus, in Pagan mythology, one of the deities of the ancient Egyptians, and according to ſome, the god of water. It is ſaid, that the Chaldeans, who worſhipped fire, carried their fancied deity through other countries to try its powers, in order that, if it obtained the victory over the other gods, it might be acknowledged as the true object of worſhip; and it having eaſily ſubdued the gods of wood, ſtone, braſs, ſilver, and gold, its prieſts declared that all gods did it homage. This the prieſt of Canopus hearing, and finding that the Chaldeans had brought their god to contend with Canopus, they took a large earthen veſſel, in which they bored ſeveral holes, which they afterwards ſtopped with wax, and having filled the veſſel with water, painted it of ſeveral colours, and fitting the head of an idol to it, brought it out, in order to contend with the Chaldean deity. The Chaldeans accordingly kindled their fire all around it; but the heat having melted the wax, the water guſhed out through the holes, and extinguiſhed the fire; and thus Canopus conquered the god of the Chaldeans.

Canopus, or *Canobus*, according to Strabo, had been Menelaus's pilot, and had a temple erected to him in a town called *Canopus*, near one of the mouths of the Nile. Dionyſius mentions it: Canopus || Canoſa.

> Και τεμενος περιπυστον Αμυκλαι δι᾽ο Κανωβε.
> There ſtands Canobus' temple known to fame:
> The pilot who from fair Amycla came.

Voſſius remarks on this occaſion, the vanity of the Greeks, who, as he conjectures, hearing of an Egyptian deity named *Canopus*, took from thence an opportunity of deifying the pilot of Menelaus who bore the ſame name, and giving out that the Egyptian god Canopus had been a Greek. F. Monfaucon gives ſeveral repreſentations of this deity. One, in alluſion to the victory above-mentioned, throws out water on every ſide through little holes.

Canopus, or *Canobus*, in *Ancient Geography*, a town of the Lower Egypt, on the Mediterranean, a hundred and twenty ſtadia, or fifteen miles, to the eaſt of Alexandria; as old as the war of Troy, Canopus, or Canobus, Menelaus's ſteerſman, being there buried. *Canopaei* the gentilitious name; famous for their luxury and debauchery, (Strabo, Juvenal.) See Abouкir.

CANOPY, in *Architecture* and *Sculpture*, a magnificent kind of decoration, ſerving to cover and crown an altar, throne, tribunal, pulpit, chair, or the like. The word is formed from the barbarous Latin *canopeum*, of κωνωπειον, *a net ſpread over a bed to keep off the gnats*, from κωνωψ, *a gnat*.

Canopies are alſo borne over the head in proceſſions of ſtate, after the manner of umbrellas. The canopy of an altar is more peculiarly called *ciborium*.

The Roman grandees had their canopies, or ſpread veils, called *thenſæ*, over their chairs: the like were alſo in temples over the ſtatues of the gods. The modern cardinals ſtill retain the uſe of canopies.

CANOSA, a town of Puglia in Italy, occupying part of the ſite of the ancient Canuſium. The old city was founded by Diomedes, according to Strabo. It afterwards became a Roman colony, and one of the moſt conſiderable cities of this part of Italy for extent, population, and magnificence in building. The era of Trajan ſeems to have been that of its greateſt ſplendour: but this pomp only ſerved to mark it as a capital object for the avarice and fury of the Barbarians. Genſeric, Totila, and Autharis, treated it with extreme cruelty. The deplorable ſtate to which this province was reduced in 590 is conciſely but ſtrongly painted by Gregory the Great in theſe terms: "On every ſide we hear groans; on every ſide we behold crowds of mourners, cities burnt, caſtles razed to the ground, countries laid waſte, provinces become deſerts, ſome citizens led away captives, and others inhumanly maſſacred." No town in Puglia ſuffered more than Canoſa from the outrages of the Saracens; the conteſts between the Greeks and Normans increaſed the meaſure of its woes, which was filled by a conflagration that happened when it was ſtormed by Duke Robert. In 1090, it was aſſigned, by agreement, to Bohemund prince of Antioch, who died here in 1111. Under the reign of Ferdinand the Third, this eſtate belonged to the Grimaldis. On their forfeiture, the Affaititi acquired it, and ſtill retain the title of marquis, though the Capeci are the proprietors of the fief. *Swinburne's Travels in Sicily*, page 408.

The

Canſo
||
Cantabria.

The ancient city ſtood in a plain between the hills and the river Ofanto, and covered a large tract of ground. Many brick monuments, though degraded and ſtripped of their marble caſing, ſtill atteſt its ancient grandeur. Among them may be traced the fragments of aqueducts, tombs, amphitheatres, baths, military columns, and two triumphal arches, which, by their poſition, ſeem to have been two city gates. The preſent town ſtands above, on the foundations of the old citadel, and is a moſt pitiful remnant of ſo great a city, not containing above three hundred houſes. The church of Sabinus, built, as is ſaid, in the ſixth century, is now without the encloſure. It is aſtoniſhing, that any part of this ancient cathedral ſhould have withſtood ſo many calamities. Its altars and pavements are rich in marble; and in a ſmall court adjoining, under an octagonal cupola, is the mauſoleum of Bohemund, adorned in a minute Gothic ſtyle.

CANSO, a ſea port town of Acadia, or Nova Scotia, in North America, ſeated on a narrow ſtrait which ſeparates Nova Scotia from Cape Breton. Near this town is a fine fiſhery for cod. W. Long. 62. N. Lat. 46.

CANSTAT, a town of Swabia, in Germany, in the duchy of Wirtemberg, ſituated on the river Neckar, in E. Long. 9. 9. N. Lat. 48. 51.

CANT, a quaint affected manner of ſpeaking, adapted chiefly to the lower ſort. Skinner racks his invention for the origin of this word; which he ſucceſſively deduces from the German, Flemiſh, and Saxon tongues. According to the general opinion, Cant is originally the proper name of a Cameronian preacher in Scotland, who by exerciſe had attained the faculty of talking in the pulpit in ſuch a tone and dialect as was underſtood by none but his own congregation: ſince Andrew Cant's time, the word has been extended to ſignify all ſudden exclamations, and whining unmuſical tones, eſpecially in praying and preaching. But this origin of the word has been diſputed by others; and perhaps the true derivation is from the Latin *cantare* "to ſing."

CANT is alſo applied to words and phraſes affected by particular perſons or profeſſions for low ends, and not authorized by the eſtabliſhed language *. The difference between *cant* and *technical* ſeems to be this: the former is reſtrained to words introduced out of folly, affectation, or impoſture: the latter is applied to ſuch as are introduced for the ſake of clearneſs, preciſion, and ſignificancy.

* See *Canting Language.*

CANT is alſo uſed to denote a ſale by auction. The origin of the word in this ſenſe is dubious; it may come, according to ſome, from *quantum*, how much; according to others, from *cantare*, to ſing or cry aloud; agreeably to which, we ſometimes alſo call it an *outcry*.

CANT Timbers, in ſhip-building, thoſe timbers which are ſituated at the two ends of a ſhip. They derive their name from being *canted*, or raiſed obliquely from the keel; in contradiſtinction from thoſe whoſe planes are perpendicular to it. The upper ends of thoſe on the bow, or fore part of the ſhip, are inclined to the ſtern; as thoſe in the after or hind part, incline to the ſtern poſt above. See *SHIP-Building*.

CANTABRIA, in *Ancient Geography*, a diſtrict of Tarraconenſis, on the Oceanus Cantabricus, or bay of Biſcay; now BISCAY. The inhabitants were famous for their warlike character. In conjunction with the Aſturians †, they carried on deſperate wars with the Romans; but were ſubdued by them about 25 years before Chriſt. Being impatient, however, of a foreign yoke, they in a few years revolted. Moſt of their youth had been already taken priſoners by the Romans, and ſold for ſlaves to the neighbouring nations: but having found means to break their chains, they cut the throats of their maſters; and returning into their own country, attacked the Roman garriſons with incredible fury. Agrippa marched againſt them with great expedition; but on his arrival, met with ſo vigorous a reſiſtance, that his ſoldiers began to deſpair of ever being able to reduce them. As the Cantabrians had waged war with the Romans for upwards of 200 years, they were well acquainted with their manner of fighting, no way inferior to them in courage, and were now become deſperate; well knowing, that if they were conquered, after having ſo often attempted to recover their liberty, they muſt expect the moſt ſevere uſage, and cruel ſlavery. Animated with this reflection, they fell upon the Romans with a fury hardly to be expreſſed, routed them in ſeveral engagements, and defended themſelves when attacked by the enemy with ſuch intrepidity, that Agrippa afterwards owned, that he had never, either by ſea or land, been engaged in a more dangerous enterpriſe. That brave commander was obliged to uſe entreaties, menaces, and to brand ſome of his legionaries with ignominy, before he could bring them to enter the liſts with ſuch a formidable enemy. But having at laſt, with much ado, prevailed upon them to try the chance of an engagement in the open field, he ſo animated them by his example, that, after a moſt obſtinate diſpute, he gained a complete victory, which indeed coſt him dear, but put an end to that deſtructive war. All the Cantabrians fit to bear arms were cut in pieces; their caſtles and ſtrong holds taken and razed; and their women, children, and old men (none elſe being left alive), were obliged to abandon the mountainous places, and ſettle in the plain.

Cantabria.

† See *Aſturias.*

Dr Wallis ſeems to make the Cantabrian the ancient language of all Spain; which, according to him, like the Gauliſh, gave way to a kind of broken Latin called *romance* or *romanſh*; which by degrees was refined into the Caſtilian or preſent Spaniſh. But we can hardly ſuppoſe, that ſo large a country, inhabited by ſuch a variety of people, ſpoke all the ſame language. The ancient Cantabrian, in effect, is ſtill found to ſubſiſt in the more barren and mountainous parts of the province of Biſcay, Aſturias, and Navarre, as far as Bayonne, much as the Britiſh does in Wales; but the people only talk it: for writing, they uſe either the Spaniſh or French, as they happen to live under the one or the other nation. Some attribute this to a jealouſy of foreigners learning the myſteries of their language; others to a poverty of words and expreſſions. The Cantabrian does not appear to have any affinity with any other known language, abating that ſome Spaniſh words have been adopted in it for things whoſe uſe the Biſcayans were anciently unacquainted with. Its pronunciation is not diſagreeable. The Lord's prayer, in the Cantabrian tongue, runs thus: *Gure aita cervetan aicena, ſantifica bedi hire icena, ethor ledi hire reſuma, eguin*

Cantabrica || Cantaro.

eguin bedi hire vorondatea cervan becala lurrean ere, &c.

CANTABRICA, in *Botany*: a ſynonyme of a ſpecies of CONVOLVULUS.

CANTABRUM, in *Antiquity*, a large kind of flag uſed by the Roman emperors, diſtinguiſhed by its peculiar colour, and bearing on it ſome words or motto of good omen, to encourage the ſoldiers.

CANTACUZENUS, JOHANNES, of Conſtantinople, a celebrated ſtateſman, general, and hiſtorian, was born in that city, of a very ancient and noble family. He was bred to letters and to arms, and admitted to the higheſt offices of the ſtate. The emperor Andronicus loaded him with wealth and honour; made him generaliſſimo of his forces; and was deſirous of having him join him in the government, but this he refuſed. Andronicus dying in 1341, left to Cantacuzenus the care of the empire, till his ſon John Paleologus, who was then but nine years of age, ſhould be fit to take it upon himſelf. This truſt he faithfully diſcharged; till the empreſs dowager and her faction forming a party againſt him, declared him a traitor. On this the principal nobility and the army beſought him to aſcend the throne; and accordingly he was crowned on the 21ſt of May 1342. This was followed by a civil war, which laſted five years; when he admitted John a partner with him in the empire, and their union was confirmed by his giving him his daughter in marriage. Suſpicions and enmities however, ſoon ariſing, the war broke out again, and continued till John took Conſtantinople in 1355. A few days after, Cantacuzenus, unwilling to continue the effuſion of blood, abdicated his ſhare of the empire, and retiring to a monaſtery, took the habit of a monk, and the name of *Joaſaphas*. His wife alſo retired to a nunnery, and changed her name of *Irene* for that of *Eugenia*. In this retirement he lived till the year 1411, when he was upwards of 100 years of age. Here he wrote a hiſtory of his own times, a Latin tranſlation of which, from the Greek manuſcript, was publiſhed by Pontanus at Ingolſtadt, in 1603: and a ſplendid edition was printed at Paris in 1645, in three volumes folio, of the original Greek, and Pontanus's Latin verſion. He alſo wrote an apology for the Chriſtian religion againſt that of Mahomet, under the name of *Chriſtodulus*.

CANTALIVERS, in *Architecture*, pieces of wood framed into the front or ſides of a houſe, to ſuſpend the mouldings and eyes over it.

CANTAR, or CANTARO, an eaſtern weight, of different value in different places, equal at Acra in Turkey to 603 pounds, at Tunis and Tripoli to 114 pounds.

CANTAR is alſo an Egyptian weight, which is denominated a *quintal*, and conſiſts of a hundred or of an hundred and fifty rotolos, according to the goods they are to weigh.

CANTARO is alſo an Egyptian weight, which at Naples is equivalent to 25 pounds, at Genoa to 150 pounds. At Leghorn there are three kinds of *cantaros*, one weighing 150 pounds, another 151, and a third 160 pounds.

CANTARO is alſo a Spaniſh liquid meaſure, in uſe eſpecially at Alicant, containing three gallons.

CANTARO is alſo a meaſure of capacity, uſed at Cochin, containing four rubis, the rubi 32 rotolos. Cantaro || Cantemir.

CANTARINI, SIMON, a famous painter, called the *Peſareſe*, from his being born at Peſaro, was the diſciple of Guido; and copied the manner of his maſter ſo happily, that it is often difficult to diſtinguiſh between their works. He died at Verona in 1648.

CANTATA, in *Muſic*, a ſong or compoſition, intermixed with recitatives, airs, and different movements, chiefly intended for a ſingle voice, with a thorough baſs, though ſometimes for other inſtruments.

The cantata, when performed with judgment, has ſomething in it very agreeable; the variety of the movement not clogging the ear, like other compoſitions. It was firſt uſed in Italy, then in France, whence it paſſed to us.

CANTAZARO, an epiſcopal city of Italy, in the kingdom of Naples, and in the territory of Calabria Ulterior. It is the reſidence of the governor of the province, and is ſeated near the ſea, in E. Long. 17. 0. N. Lat. 38. 59.

CANTECROIX, a ſmall territory of the Netherlands, in Brabant, and in the quarter of Antwerp, with the title of a principality; there is a ſmall town of the ſame name, but Lire is the capital.

CANTEMIR, DEMETRIUS, ſon of a prince of Moldavia. Diſappointed by not ſucceeding his father in that dignity, held under the Ottoman Porte, he went over with his army to the Czar Peter the Great, againſt whom he had been ſent by the Grand Signior: he ſignalized himſelf in the czar's ſervice; and in the republic of letters, by a Latin hiſtory of the origin and decline of the Ottoman empire, &c. He died in 1723.

CANTEMIR, *Antiochus*, eſteemed the founder of the Ruſſian poetry, was the youngeſt ſon of the preceding. Under the moſt ingenious profeſſors, whom the czar had invited to Peterſburgh, he learned mathematics, phyſic, hiſtory, moral philoſophy, and polite literature; without neglecting the ſtudy of the Holy Scriptures, to which he had a great inclination. Scarce had he finiſhed his academic courſe, when he printed a Concordance of the Pſalms in the Ruſſian language, and was elected member of the academy. The affairs of ſtate in which he was ſoon after engaged, did not make him neglect his literary purſuits. In order to make himſelf uſeful to his fellow citizens, he compoſed his ſatires, to ridicule certain prejudices which had got footing among them. When but 24 years of age, he was nominated miniſter at the court of Great Britain; and his dexterity in the management of public affairs was as much admired as his taſte for the ſciences. He had the ſame reputation in France, whither he went in 1738, in quality of miniſter plenipotentiary, and ſoon after was inveſted with the character of ambaſſador extraordinary. The wiſe and prudent manner in which he conducted himſelf during the different revolutions which happened in Ruſſia during his abſence, gained him the confidence and eſteem of three ſucceſſive princes. He died of a dropſy, at Paris, in 1744, aged 44. Beſides the pieces already mentioned, he wrote, 1. Some Fables and Odes. 2. A tranſlation of Horace's Epiſtles in Ruſſian verſe. 3. A proſe

Canterbury. proſe tranſlation of Fontenelle's Plurality of Worlds; and, 4. Algarotti's Dialogues on Sight. The Abbé Guaſco has written his life in French, and tranſlated his ſatires into that language.

CANTERBURY, a city of England, and capital of the county of Kent, ſituated in E. Long. 1. 15. N. Lat. 51. 16. It had the names of *Durovernum* and *Darvernum* given it by the Romans, and *Durobernia* by Bede, which are thought to be derived from *Durwhem*, ſignifying a rapid ſtream, ſuch as the Stour, on which it ſtands, is. The Britons call it *Caer Kent*, i. e. the city of Kent; and its preſent Engliſh name is of the ſame import, derived from the Saxon. Modern writers in Latin call it *Cantuaria*. Its great antiquity appears not only from Antoninus's Itinerary, but from the military way which has been diſcovered here, and the cauſeways leading to Dover and Lymme, beſides the coins and other curioſities found about it. The archiepiſcopal and metropolitan dignity ſeems to have been ſettled here very early; and to prevent its being removed, an anathema was decreed againſt any who ſhould attempt it. After that, the city flouriſhed greatly; though it ſuffered in common with other towns during the Daniſh invaſions, and at other times by the caſualties of fire. The city was given entirely to the biſhops by William Rufus, and was held in the utmoſt veneration in the Popiſh times, eſpecially after the murder of Becket in the reign of Henry II. to whoſe ſhrine ſo great was the reſort, and ſo rich were the offerings, that Eraſmus, who was an eye witneſs of its wealth, ſays the whole church and chapel in which he was interred glittered with jewels; and at the diſſolution, the plate and jewels filled two great cheſts, each of which required eight ſtrong men to carry out. The cathedral was granted by Ethelbert, king of Kent, upon his converſion, to Auſtin the monk, together with his palace, and the royalty of the city and its territories. This Auſtin founded a monaſtery for monks, called from him *Auguſtine*. After the cathedral had been ſeveral times deſtroyed by fire and rebuilt, the preſent was begun about the year 1174, and augmented and embelliſhed by the ſucceeding archbiſhops, till it was completed in the reign of Henry V. It is a noble Gothic pile, and before the Reformation had 37 altars. A great many kings, princes, cardinals, and archbiſhops, are buried in it. At the diſſolution, Henry VIII. ſeized all the revenues both of the church and monaſtery, except what he allotted for the maintenance of a dean, 12 prebendaries, and ſix preachers, whom he eſtabliſhed in place of the monks. During the grand rebellion, it ſuffered much; the uſurper Cromwell having made a ſtable of it for his dragoons. After the Reſtoration, it was repaired, and made what it now appears.

Beſides the cathedral and other churches, as well as a monaſtery, the city had anciently a caſtle on the ſouth ſide, and ſtrong walls, with towers, a ditch, and rampart; it had alſo a mint and an exchange. As to its government, it ſeems to have been entirely ſubject to the archbiſhop, both in ſpirituals and temporals; at leaſt from the time that William Rufus gave it ſolely to Biſhop Anſelm, till the Reformation. It is now a county of itſelf: and the corporation conſiſts of a mayor, recorder, 12 aldermen, a ſheriff, 24 common council men, a mace-bearer, ſword-bearer, and four ſerjeants at mace. Every Monday a court is held at Guildhall for civil and criminal cauſes: and every other Tueſday for the government of the city. Here were formerly 2000 or 3000 French Proteſtants employed in the ſilk manufacture; but this branch is now greatly decayed in the place, ſince Spittalfields became ſo flouriſhing. Beſides the cathedral, it contains 15 pariſh churches, ſeven hoſpitals, a free ſchool, a houſe of correction, a gaol for criminals, and ſumptuous conduit for ſupplying the inhabitants with water. It conſiſts of four ſtreets, diſpoſed in the form of a croſs, and divided into ſix wards, which are about three miles in circumference. It is ſurrounded on all hands with hop grounds much to its advantage, and is famed for its excellent brawn. Canterbury bell, Canterus.

The dioceſe of Canterbury contains 257 pariſhes, beſides chapels, in Kent, and about 100 more in other dioceſes. Theſe are called *Peculiars;* it being an ancient privilege of this ſee, that, whereſoever the archbiſhops had either manors or advowſons, the place was exempted from the juriſdiction of the ordinary of the dioceſe where it was ſituated, and was deemed in the dioceſe of Canterbury. This ſee is valued in the king's books at 2816l. 17s. 9¼d, but is reckoned to produce a clear revenue of 8000l. a year. The clergy's tenths come to 651l. 18s. 2¼d. This ſee had many great privileges in the time of Popery, ſome of which it ſtill retains. The archbiſhop is accounted primate and metropolitan of all England, and is the firſt peer in the realm; having the precedence of all dukes not of the blood royal, and of all the great officers of ſtate. In common ſpeech he is ſtyled *His Grace*, and he writes himſelf *Divina Providentia;* whereas other biſhops ſtyle themſelves *Divina Permiſſione*. At coronations, he places the crown on the king's head; and, whereever the court may be, the king and queen are the proper domeſtic pariſhioners of the archbiſhop of Canterbury. The biſhop of London is accounted his provincial dean, the biſhop of Wincheſter his ſubdean, the biſhop of Lincoln his chancellor, and the biſhop of Rocheſter his chaplain. This ſee hath yielded to the church 18 ſaints; to the church of Rome, 9 cardinals; to the civil ſtate of England, 12 lord chancellors, 4 lord treaſurers, and 1 lord chief juſtice; and 9 chancellors to the univerſity of Oxford. To this ſee belongs only one archdeacon, viz. of Canterbury. To the cathedral belongs an archbiſhop, a dean, a chancellor, an archdeacon, 12 prebends, 6 preachers, 6 minor canons, 6 ſubſtitutes, 12 lay clerks, 10 choriſters, 2 maſters, 50 ſcholars, and 12 almſmen.

Canterbury Bell, the Engliſh name of a ſpecies of Campanula. See Botany *Index*.

CANTERUS, William, an eminent linguiſt and philologer, was born at Utrecht, in 1541. He ſtudied at Louvain and Paris; and gave ſurpriſing proofs of his progreſs in Greek and Latin literature. He afterwards viſited the ſeveral univerſities of Germany and Italy; and died at Louvain, in 1575, aged 33. He underſtood ſix languages, beſides that of his native country; and, notwithſtanding his dying ſo young, wrote ſeveral philological and critical works, among which are, *Notæ*, *Scholia*, *Emendationes*, *et Explicationes*, *in Euripidem*, *Sophoclem*, *Eſchylum*, *Ciceronem*, *Propertium*, *Auſonium*, &c. and many tranſlations of Greek authors.

CANTHARIDES,

Cantharides || Canticles.

CANTHARIDES, in the *Materia Medica*, flies which are employed to produce bliſters on the ſkin.

CANTHARIS, in *Zoology*, a genus of inſects belonging to the order of inſecta coleoptera. Linnæus enumerates 27 ſpecies of the cantharis, moſt of them to be found in different parts of Europe. The cantharis uſed in making bliſtering plaſters is ranked under the genus MELOE. See ENTOMOLOGY *Index*.

CANTHI, in *Anatomy*, cavities at the extremities of the eyelids, commonly called the *corners of the eye:* the greater of them, or the greater canthus, is next the noſe; the leſſer of them, or the little canthus, lies towards the temple.

CANTICLES, a canonical book of the Old Teſtament, otherwiſe called the *Song of Solomon;* by the Jews the *Song of Songs*, *Canticum Canticorum*. The book of Canticles is uſually ſuppoſed to be an epithalamium compoſed by Solomon, on occaſion of his marriage with the king of Egypt's daughter. But thoſe who penetrate further into the myſtery, find in it the marriage of Jeſus Chriſt with human nature, the church, and good men. On this principle the Canticles is held to be a continued allegory, wherein under the terms of a common wedding, a divine and ſpiritual marriage is expreſſed. This ſong contains the adventures of ſeven days and ſeven nights; the exact time allowed for the celebration of marriage among the Hebrews. The Jews themſelves, apprehending the book liable to be underſtood in a groſs and carnal manner, prohibited the reading of it before the age of 30, and the ſame uſage anciently obtained in the Chriſtian church. Among the ancients, Theodore Mopſuetanus rejected the book of Canticles as not divine. Divers rabbins have alſo queſtioned its being written by inſpiration. It is alleged, that the name of God is not once found in it. Mr Whiſton has a diſcourſe expreſs to prove that the Canticles is not a ſacred book of the Old Teſtament. He alleges it indeed to have been written by King Solomon the ſon of David; but aſſerts that it was compoſed at the time when that prince, blinded by his concubines, was ſunk in luſt and idolatry. This he chiefly infers from the general character of vanity and diſſoluteneſs which reigns through the Canticles: in which there is not, according to Whiſton, one thought that leads the mind towards religion, but all is wordly and carnal, to ſay no worſe. For the myſtic ſenſe, he aſſerts it to be without foundation; and that the book is not cited as canonical by any writer before the deſtruction of Jeruſalem. Mr Whiſton will have it to have been taken into the canon between the years 77 and 128, when allegories came into vogue, and the rabbins began to corrupt the text of Scripture. Grotius, Nierembergius, the Dutch divines who criticiſed F. Simon, Menetrier, Baſnage, and ſome others, ſeem alſo to take the Canticles for a profane compoſition, on a footing with the love pieces of Catullus or Ovid. But this opinion is refuted by Michaelis, Majus, Witſius, Nat. Alexander, Outrein, Francius, and others. Mr Whiſton's arguments have been particularly conſidered by Itchener, and alſo by Dr Gill. R. Akiba finds the book of Canticles more divine than the reſt: the whole world, according to this rabbin, is not worth that day when the Canticles was given to Iſrael; for, whereas all the hagiographers are holy, the Canticles is the holy of holies.

Cantimarons || Cantium.

CANTIMARONS, or CATIMARONS, a kind of floats or rafts, uſed by the inhabitants of the coaſt of Coromandel to go a fiſhing in, and to trade along the coaſt. They are made of three or four ſmall canoes, or trunks of trees dug hollow, and tied together with cacao ropes, with a triangular ſail in the middle, made of mats. The perſons who manage them are almoſt half in the water, there being only a place in the middle a little raiſed to hold their merchandiſe: which laſt particular is only to be underſtood of the trading cantimarons, and not of thoſe who go a-fiſhing.

CANTIN, CAPE, a promontory of the coaſt of Morocco in Africa, ſituated in W. Long. 10. 2. N. Lat. 33. 9.

CANTING, a ſea phraſe, denotes the act of turning any thing about.

CANTING Language or *Dialect*, is a myſterious ſort of jargon uſed by gypſies, thieves, and ſtrolling beggars, to expreſs their ſentiments to each other, without being underſtood by the reſt of mankind. This dialect is not founded on any rules; yet even out of that irregularity many words ſeem to retain ſomething of ſcholarſhip; as *togeman*, a gown, from *toga* in the Latin; *pannam*, bread, from *panis; caſan*, cheeſe, from *caſeus*, &c. It is obſervable, that, even unknown to ourſelves, we have adopted ſome of their terms into our vulgar language; as *bite* and *bilk*, to cheat; *bounce*, to vapour; *bouſe*, ſtrong drink; *filch*, to ſteal; *flog*, to whip; *rig*, game or ridicule; *roaſt*, to rally; *rhino*, money. From the ſame ſource proceed the words *ſham*, *banter*, *bubble*, *bully*, *ſharper*, *cutting*, *ſhuffling*, *palming*, &c. An anonymous author has given a canting dictionary, comprehending all the terms uſed by the ſeveral tribes of gypſies, beggars, ſhoplifters, highwaymen, foot-pads, and other clans of cheats and villains, with a collection of ſongs in the canting dialect: London, 1725, 8vo.

CANTIUM, in *Ancient Geography*, a promontory of Britain, literally denoting a headland: giving name to a territory called *Cantium*, now Kent; and to a people called *Cantii* (Cæſar), commended for their great humanity and politeneſs. The promontory now the North *Foreland*. It is ſuppoſed that this was the firſt diſtrict in Britain which received a colony from the continent; and that it had frequently changed its maſters, by new colonies coming over from time to time, and driving the inhabitants further north. In the midſt of all theſe revolutions it ſtill retained its ancient name (which was ſo agreeable to its ſhape and ſituation), and gave the ſame name to all the ſucceſſive tribes by which it was inhabited. Thoſe who poſſeſſed it at the time of the firſt Roman invaſion were evidently of Belgic origin, and had come over ſo lately, that they differed in nothing from their countrymen on the continent. "The inhabitants of Kent (ſays Cæſar) are the moſt civilized of all the Britons, and differ but very little in their manners from the Gauls." This great reſemblance between the people of Kent and their neighbours on the continent, might be partly owing to the ſituation of their country, which being neareſt to the continent, was moſt frequented by ſtrangers from thence. It was this ſituation alſo which expoſed them to the firſt aſſaults of the Romans. For Cæſar, in both his expeditions into this iſland, landed in Kent; and therefore we many conclude,

Cantium || Canton.

that the Cantii had a great ſhare in the vigorous oppoſition that was made to his landing, and in the ſeveral battles and ſkirmiſhes which were fought againſt him after his landing; particularly, they made a very bold, but unſucceſsful attempt, upon his naval camp. The Cantii did not make the ſame vigorous reſiſtance to the Romans on their next invaſion in the reign of Claudius. For Aulus Plautius, the Roman general in that expedition, traverſed their country without ſeeing an enemy; and as they now ſubmitted to the power of Rome without a ſtruggle, ſo they continued in a ſtate of quiet ſubmiſſion to it to the very laſt. The ſituation of Cantium occaſioned its being much frequented by the Romans, who generally took their way through it in their marches to and from the continent. Few places in Britain are more frequently mentioned by the Roman writers than Rutupium and Portus Rutupenſis, moſt probably Richborough and Stonar. Rutupium was the ſame in thoſe times that Dover is in ours; the uſual place of embarking for, and landing from, the continent. Before the final departure of the Romans out of Britain, Portus Dubris, now Dover, had become a conſiderable place, and a well frequented harbour, where the third iter of Antoninus ends, and from whence they often embarked for Gaul. Portus Lemanus, ſuppoſed to be Lime near Weſt Hythe, was alſo a noted ſeaport in theſe times, and the termination of the fourth iter of Antoninus. Durobrivæ and Durovernum, now Rocheſter and Canterbury, were both Roman towns and ſtations, and are often mentioned in the Itinerary and other books. Beſides theſe, there were ſeveral other Roman ſtations, towns, and ports in Cantium, which need not be particularly enumerated here. Cantium, in the moſt perfect ſtate of the Roman government, made a part of the province which was called *Flavia Cæſarienſis*.

CANTO, denotes a part or diviſion of a poem, anſwering to what is otherwiſe called a *book*. The word is Italian, where it properly ſignifies *ſong*. Taſſo, Arioſto, and ſeveral other Italians, have divided their longer or heroic poems into cantos. In imitation of them, Scarron has alſo divided his *Gigantomachia*, and Boileau his *Lutrin*, into chants or ſongs. The like uſage has been adopted by ſome Engliſh writers, as Butler, who divides his Hudibras, and Dr Garth his Diſpenſary, into cantos. A late tranſlator of part of Virgil's Æneid has even ſubdivided a book of Virgil into ſeveral cantos.

Canto, in the Italian muſic, ſignifies a *ſong*: hence *canto ſimplice* is where all the notes or figures are equal, and called alſo *canto fermo*; *canto figurato*, that where the figures are unequal, and expreſs different motions.

Canto alſo ſignifies the treble part of a ſong: hence *canto concertante*, the treble of the little chorus; *canto repieno*, the treble of the grand chorus, or that which ſings only now and then in particular places. *Canto* ſignifies the firſt treble, unleſs ſome other word be added to it, as *ſecondo*; in which caſe it denotes the ſecond treble.

CANTON, in *Geography*, denotes a ſmall diſtrict or country conſtituting a diſtinct government: ſuch are the cantons of Switzerland.

Canton, *Quang-tong*, or Koanton, one of the ſouthern provinces of China; bounded on the north-eaſt by Fokien, on the north by Kiang-ſi, on the weſt by Quang-ſi and the kingdom of Tonking, and everywhere elſe by the ſea. The country is diverſified with hills and plains, and the ſoil in general ſo fertile that it produces two crops annually. Beſides many of the fruits of Europe, and thoſe common in other parts of the Indies, the province of Canton produces ſome peculiar to itſelf. Abundance of valuable aromatic woods are alſo to be met with in this province, as well as eagle wood, ebony, &c. and in the mineral kingdom the province furniſhes gold, precious ſtones, tin, quickſilver, and copper. Silk and ſugar are alſo cultivated here, and pearls are fiſhed up on the coaſts; ſo that every thing which can contribute to the pleaſure or convenience of life is to be met with in Canton. "One begins (ſays F. Premare) to have an idea of China, on entering the river Canton. Both ſides of it preſent large fields of rice which reſemble green meadows, and extend beyond the reach of ſight. They are interſected by an infinite number of ſmall canals, in ſuch a manner that the barks which paſs and repaſs in them ſeem at a diſtance, while the water which carries them is concealed, to glide along the graſs. Farther inland the country appears covered with trees, and cultivated along the valleys; and the whole ſcene is interſperſed with villages, rural ſeats, and ſuch a variety of delightful proſpects, that one is never tired of viewing them, and regrets to be obliged to paſs them ſo quickly.

Canton.

All the coaſts of this province abound with fiſh, and furniſh vaſt numbers of crabs, oyſters, and tortoiſes of an immenſe ſize. The inhabitants keep a prodigious number of tame ducks, which they hatch in ovens or dunghills, though it does not appear that they borrowed this cuſtom from the Egyptians. The docility of theſe creatures exceeds what we ſhould be apt at firſt to imagine. The inhabitants load a number of ſmall barks with them, and carry them in flocks to feed on the ſea ſhore, where they find ſhrimps and other animals proper for their nouriſhment. But though the ducks from the different barks are thus unavoidably mixed together in the day time, they are eaſily collected by only beating on a baſon, on which they immediately collect themſelves into different flocks, and each returns to his proper bark.

In this province the Chineſe have alſo a method of preſerving not only the fleſh of the ducks in ſuch a manner that it loſes nothing of its original flavour, but their eggs alſo. The latter operation is performed by covering the eggs with a coat of clay mixed with ſalt. When mixed in this manner, it ſeems that the ſalt has the property of penetrating through the pores of the ſhell, and thus impregnating the ſubſtance in the egg, which it could not do by ſimple ſolution in water.

Canton, though it ſuffered much in the Chineſe wars, is at preſent one of the moſt flouriſhing provinces of the empire; and being at a great diſtance from court, its government is one of the moſt important. A great number of fortreſſes, many of which are cities, provided with numerous garriſons, have been built along the coaſts for the ſuppreſſion of pirates and robbers; for which purpoſe alſo a certain number of troops are kept properly poſted in different parts of the province. It is divided into ten diſtricts, which contain as many cities of the firſt claſs, and 84 of the ſecond and third. The air in general is warm but healthy,

Canton. healthy, and the people are very induſtrious. They poſſeſs in an eminent degree the talent of imitation; ſo that if they are only ſhown any European work, they can execute others like it with ſurpriſing exactneſs. The moſt remarkable cities in the province beſides Canton the capital are, 1. Chao-tcheou-fou, chiefly noted for a monaſtery of bonzes in its neighbourhood, to which the adjacent country belongs, and the origin of which is traced back for 800 or 900 years. It has under its juriſdiction ſix cities of the third claſs; near one of theſe grows a reed of which ſeveral inſtruments are made, which cannot be diſtinguiſhed from real ebony. The air of Chao-tcheou-fou, however, is unhealthy; and great numbers of the inhabitants are carried off annually by contagious diſtempers, which prevail from the middle of October to the beginning of December. 2. Kao-tcheou-fou, ſituated in a delightful and plentiful country. In the neighbourhood is found a ſingular kind of ſtone much reſembling marble, on which are natural repreſentations of rivers, mountains, landſcapes, and trees. Theſe ſtones are cut into ſlabs, and made into tables, &c. Crabs are alſo caught on the coaſts here, which very much reſemble thoſe of Europe; but, ſays M. Groſier, they have this ſingularity, that when taken out of the water, they become petrified without loſing any thing of their natural figure. 3. Kiun-tcheou-fou, the capital of the iſland of Hai-nan. See HAI-NAN.

CANTON, a large, populous, and wealthy city of China, capital of the province of that name, ſtands on the banks of the river Taa, or great river, which, near the city, is wide and ſpacious. The wall of the city is pretty high, and about ſix or ſeven miles in circumference, though not more than one third of the ground is occupied by buildings, the other parts being appropriated to pleaſure grounds or to fiſh ponds. The country is extremely pleaſant, and towards the eaſt hilly, ſo as to command a beautiful proſpect of the city and ſuburbs, the compaſs of which, together, is about ten miles.

The buildings of Canton are in general low, conſiſting of one ſtory and a ground floor, which is covered with earth or red tiles in order to keep it cool; but the houſes of the moſt reſpectable merchants and mandarins are comparatively lofty and well built. In different parts of the city and ſuburbs are joſs houſes or temples, in which are placed the images worſhipped by the Chineſe: before whom are placed, at particular ſeaſons, a vaſt variety of ſweetmeats, oranges, great plenty of food ready dreſſed, and alſo incenſe, which is kept perpetually burning.

The ſtreets of Canton are long and narrow, paved with flat ſtones, adorned at intervals with triumphal arches, which have a pleaſing effect, and much crowded with people. On both ſides are ſhops as in London, appropriated to the ſale of different commodities; and a kind of awning is extended from houſe to houſe, which prevents the ſun's rays from incommoding either inhabitants or paſſengers. At the end of every ſtreet is a barrier, which, with the gates of the city, are ſhut in the evening. In China ſtreet, which is pretty long and conſiderably wider than the reſt, reſide merchants; whoſe trade, ſo far as reſpects china, lackered ware, fans, &c. is wholly confined to Europeans. Moſt of them ſpeak the foreign languages tolerably well, or at leaſt ſufficiently intelligible to tranſact buſi- Canton. neſs. Beſides theſe merchants, there is a company of twelve or thirteen, called the *Cohong*; who have an excluſive right by appointment from authority to purchaſe the cargoes from the different ſhips, and alſo to ſupply them with teas, raw ſilks, &c. in return. The eſtabliſhment of the Cohong, though injurious to private trade, is admirably well adapted for the ſecurity of the different companies with which they traffic; becauſe each individual becomes a guarantee for the whole; ſo that if one fail, the others conſider themſelves as reſponſible.

In Canton there are no carriages; all burdens are carried by porters acroſs their ſhoulders on bamboos; as are alſo the principal people in ſedan chairs, and the ladies always. The ſtreets of Canton may be traverſed from morning till evening without ſeeing a woman, thoſe excepted who are Tartars, and even theſe but very ſeldom.

On the wharf of the river, which is commodious and pleaſant, ſtand the factories of the different European nations, viz. the Dutch, French, Swedes, Danes, Engliſh, &c. In thoſe reſide the ſupercargoes belonging to their reſpective companies, who are appointed to diſpoſe of the cargoes brought to market; to ſupply the ſhips with others from Europe in return; and, during their abſence, to contract with the merchants for ſuch articles as may be judged neceſſary for the next fleet. Between the reſidents of the factories the moſt perfect cordiality ſubſiſts; in each a common and ſplendid table is kept at the company's expence, and viſits are reciprocally exchanged; ſo that nothing is wanting to make reſidence at Canton agreeable to an European, but the pleaſure naturally reſulting from the ſociety of women.

The ſide of the river next the city is covered with boats, which form a kind of town or ſtreets, in which live the poorer ſort of the Chineſe, or rather the deſcendants of the Tartars. Some of the men come on ſhore in the morning to their reſpective employments, and in thoſe ſampans, or boats which are not ſtationary, the women and alſo the men carry paſſengers from place to place in the ſame manner as is done by wherries on the Thames. On this river live many thouſand ſouls who never were permitted to come on ſhore; whoſe only habitation is their boat; in which they eat, drink, ſleep, carry on many occupations, keep ducks, &c. and occaſionally a hog.

The manufactures of Canton are principally carried on in the ſuburbs; though it has been frequently ſuppoſed that they were confined to the city; and this, by ſome writers, has been given as a reaſon why Europeans are not permitted to enter within the gates. But this is a miſtake; and perhaps the true reaſon for this very ſingular reſtraint is, that the houſes in which they keep their women are chiefly within the city.

At Wampoa, a large commodious place for anchorage, and which is about 12 or 14 miles from Canton, the European veſſels lie and unload their cargoes, which are tranſmitted by lighters to the factories; and by the ſame conveyance receive their reſpective freights. Between this place and the city are three hoppo, or cuſtomhouſes, at which the boats paſſing and repaſſing are obliged to ſtop, and undergo with their paſſengers an examination, in order to prevent ſmug-

Canton. gling. The lighters juſt mentioned, and alſo the captain's pinnace, are, however, excepted; the former having proper officers on board for the purpoſe, and the latter being narrowly watched and examined at the landing.

The weather at Canton is, in ſummer, extremely hot; and in the months of December, January, and February, cold: the country is nevertheleſs pleaſant and healthful, abounding with all the neceſſaries and delicacies of life, which may be procured on terms much cheaper than in Europe. The number of inhabitants has been eſtimated at one million; but later calculations have made the number conſiderably leſs. N. Lat. 23. 30. E. Long. 113. 20.

Canton, *John*, an ingenious natural philoſopher, was born at Stroud, in Glouceſterſhire, in 1718; and was placed, when young, under the care of a Mr Davis, of the ſame place, a very able mathematician, with whom, before he had attained the age of nine years, he had gone through both vulgar and decimal arithmetic. He then proceeded to the mathematics, and particularly to algebra and aſtronomy, wherein he had made a conſiderable progreſs, when his father took him from ſchool, and put him to learn his own buſineſs, which was that of a broad cloth weaver. This circumſtance was not able to damp his zeal for the acquiſition of knowledge. All his leiſure time was devoted to the aſſiduous cultivation of aſtronomical ſcience; and, by the help of the Caroline tables annexed to "Wing's Aſtronomy," he computed eclipſes of the moon and other phenomena. His acquaintance with that ſcience he applied likewiſe to the conſtructing of ſeveral kinds of dials. But the ſtudies of our young philoſopher being frequently purſued to very late hours, his father, fearing that they would injure his health, forbade him the uſe of a candle in his chamber any longer than for the purpoſe of going to bed, and would himſelf often ſee that his injunction was obeyed. The ſon's thirſt of knowledge was, however, ſo great, that it made him attempt to evade the prohibition, and to find means of ſecreting his light till the family had retired to reſt, when he roſe to proſecute undiſturbed his favourite purſuits. It was during this prohibition, and at theſe hours, that he computed, and cut upon ſtone, with no better an inſtrument than a common knife, the lines of a large upright ſun dial, on which, beſides the hour of the day, was ſhown the riſing of the ſun, his place in the ecliptic, and ſome other particulars. When this was finiſhed, and made known to his father, he permitted it to be placed before the front of his houſe, where it excited the admiration of ſeveral gentlemen in the neighbourhood, and introduced young Mr Canton to their acquaintance, which was followed by the offer of the uſe of their libraries. In the library of one of theſe gentlemen, he found "Martin's Philoſophical Grammar," which was the firſt book that gave him a taſte for natural philoſophy. In the poſſeſſion of another gentleman, a few miles from Stroud, he firſt ſaw a pair of globes; an object that afforded him uncommon pleaſure, from the great eaſe with which he could ſolve thoſe problems he had hitherto been accuſtomed to compute. The dial was beautified a few years ago at the expence of the gentlemen at Stroud, ſeveral of whom had been his ſchoolfellows, and who continued ſtill to regard it as a very diſtinguiſhed performance. Among other perſons with whom he became acquainted in early life, was the late reverend and ingenious Dr Henry Miles of Tooting, a learned and reſpectable member of the royal ſociety, and of approved eminence in natural knowledge. This gentleman perceiving that Mr Canton poſſeſſed abilities too promiſing to be confined within the narrow limits of a country town, prevailed on his father to permit him to come to London. Accordingly he arrived at the metropolis March 4. 1737, and reſided with Dr Miles at Tooting till the 6th of May following; when he articled himſelf for the term of five years, as a clerk to Mr Samuel Watkins, maſter of the academy in Spital-ſquare. In this ſituation, his ingenuity, diligence, and good conduct, were ſo well diſplayed, that on the expiration of his clerkſhip in May 1742, he was taken into partnerſhip with Mr Watkins for three years; which gentleman he afterwards ſucceeded in Spital-ſquare, and there continued during his whole life. In 1744, he married Penelope, the eldeſt daughter of Mr Thomas Colbrooke, and niece to James Colbrooke, Eſq. banker in London. Canton.

Towards the end of 1745, electricity, which ſeems early to have engaged Mr Canton's notice, received a very capital improvement by the diſcovery of the famous Leyden Phial. This event turned the thoughts of moſt of the philoſophers of Europe to that branch of natural philoſophy; and our author, who was one of the firſt to repeat and to purſue the experiment, found his aſſiduity and attention rewarded by many capital diſcoveries. Towards the end of 1749, he was concerned with his friend, the late Mr Benjamin Robins, in making experiments in order to determine to what height rockets may be made to aſcend, and at what diſtance their light may be ſeen. In 1750 was read at the Royal Society Mr Canton's "Method of making artificial magnets, without the uſe of, and yet far ſuperior to, any natural ones." This paper procured him the honour of being elected a member of the ſociety, and the preſent of their gold medal. The ſame year he was complimented with the degree of M. A. by the univerſity of Aberdeen; and, in 1751, was choſen one of the council of the Royal Society.

In 1752, our philoſopher was ſo fortunate as to be the firſt perſon in England, who, by attracting the electric fire from the clouds during a thunder ſtorm, verified Dr Franklin's hypotheſis of the ſimilarity of lightning and electricity. Next year, his paper entitled, "Electrical Experiments, with an attempt to account for their ſeveral Phenomena," was read at the Royal Society. In the ſame paper Mr Canton mentioned his having diſcovered, by a great number of experiments, that ſome clouds were in a poſitive, and ſome in a negative, ſtate of electricity. Dr Franklin, much about the ſame time, made the like diſcovery in America. This circumſtance, together with our author's conſtant defence of the doctor's hypotheſis, induced that excellent philoſopher, immediately on his arrival in England, to pay Mr Canton a viſit, and gave riſe to a friendſhip which ever after continued without interruption or diminution. In the "Lady's Diary, for 1756," our author anſwered the prize queſtion that had been propoſed in the preceding year. The queſtion

Canton. stion was, "How can what we call the ſhooting of ſtars be beſt accounted for; what is the ſubſtance of this phenomenon; and in what ſtate of the atmoſphere doth it moſt frequently ſhow itſelf?" The ſolution, though anonymous, was ſo ſatisfactory to his friend, Mr Thomas Simpſon, who then conducted that work, that he ſent Mr Canton the prize, accompanied with a note, in which he ſaid, he was ſure that he was not miſtaken in the author of it, as no one beſides, that he knew of, could have anſwered the queſtion. Our philoſopher's next communication to the public, was a letter in the "Gentleman's Magazine, for September 1759," on the electrical properties of the tourmalin, in which the laws of that wonderful ſtone are laid down in a very conciſe and elegant manner. On December 13th, in the ſame year, was read at the Royal Society, "An attempt to account for the regular diurnal variation of the Horizontal Magnetic Needle; and alſo for its irregular variation at the time of an Aurora Borealis." A complete year's obſervations of the diurnal variations of the needle are annexed to the paper. On Nov. 5. 1761, our author communicated to the Royal Society an account of the Tranſit of Venus, June 6. 1761, obſerved in Spital-ſquare. Mr Canton's next communication to the Society, was a letter addreſſed to Dr Benjamin Franklin, and read Feb. 4. 1762; containing ſome remarks on Mr Delaval's electrical experiments. On Dec. 16. in the ſame year, another curious addition was made by him to philoſophical knowledge, in a paper entitled, "Experiments to prove that water is not incompreſſible." Theſe experiments are a complete refutation of the famous Florentine experiments, which ſo many philoſophers have mentioned as a proof of the incompreſſibility of water. On St Andrew's day, 1763, our author was the third time elected one of the council of the Royal Society; and on Nov. 8. in the following year, were read before that learned body, his farther "Experiments and obſervations on the compreſſibility of water, and ſome other fluids." The eſtabliſhment of this fact, in oppoſition to the received opinion, formed on the haſty deciſion of the Florentine Academy, was thought to be deſerving of the ſociety's gold medal. It was accordingly moved for in the council of 1764; and after ſeveral invidious delays, which terminated much to the honour of Mr Canton, it was preſented to him Nov. 30. 1765.

The next communication of our ingenious author to the Royal Society, which we ſhall take notice of in this place, was on Dec. 22. 1763, being "An eaſy method of making a Phoſphorus that will imbibe and emit light like the Bolognian ſtone; with experiments and obſervations." When he firſt ſhowed to Dr Franklin the inſtantaneous light acquired by ſome of this phoſphorus from the near diſcharge of an electrified bottle, the doctor immediately exclaimed, "And God ſaid, Let there be light, and there was light." The dean and chapter of St Paul's having, in a letter to the preſident, dated March 5. 1769, requeſted the opinion of the Royal Society relative to the beſt and moſt effectual method of fixing electrical conductors to preſerve that cathedral from damage by lightning, Mr Canton was one of the committee appointed to take the letter into conſideration, and to report their opinion upon it. The gentlemen joined with him in this buſineſs were, Dr Watſon, Dr Franklin, Mr Delaval, and Mr Wilſon. Their report was made on the 8th of June following; and the mode recommended by them has been carried into execution. The laſt paper of our author's, which was read before the Royal Society, was on Dec. 21. 1769; and contained "Experiments to prove that the Luminouſneſs of the Sea ariſes from the putrefaction of its animal ſubſtances." In the account now given of his communications to the public, we have chiefly confined ourſelves to ſuch as were the moſt important, and which threw new and diſtinguiſhed light on various objects in the philoſophical world. Beſides theſe he wrote a number of papers both in earlier and in later life, which appeared in ſeveral different publications, and particularly in the Gentleman's Magazine.

Cantoning || Cantyre.

The cloſe and ſedentary life of Mr Canton, ariſing from an unremitted attention to the duties of his profeſſion, and to the proſecution of his philoſophical inquiries and experiments, probably contributed to ſhorten his days. The diſorder into which he fell, and which carried him off, was a dropſy. His death happened on March 22. 1772, in the 54th year of his age.

CANTONING, in the military art, is the allotting diſtinct and ſeparate quarters to each regiment; the town where they are quartered being divided into as many cantons as there are regiments.

CANTRED, or Cantreth, ſignifies a hundred villages. It is a Britiſh word, compounded of the adjective *cant*, i. e. hundred; and *tref*, a town or village. In Wales ſome of the counties are divided into cantreds, as in England into hundreds.

CANTYRE, from *Cantierre*, ſignifying a "headland;" the ſouthern diviſion of the ſhire of Argyle in Scotland. It is a peninſula, ſtretching 37 miles from north to ſouth, and ſeven miles in breadth. It is moſtly plain, arable, and populous; inhabited promiſcuouſly by Highlanders and Lowlanders, the latter being invited to ſettle in this place by the Argyle family, that the lands might be the better cultivated. It gives the title of *marquis* to the duke, and is by Lochfyn divided from Argyle Proper. This loch is an inlet from the ſea, about 60 miles in length and four in breadth, celebrated for its herring fiſhery. There are many paltry villages in this country, but no town of any conſequence except Campbelltown.

Cantyre was granted to the houſe of Argyle after the ſuppreſſion of a rebellion of the Macdonalds of the Iſles (and it is ſuppoſed of this peninſula) in the beginning of the laſt century, and the grant was afterwards ratified by parliament. The ancient inhabitants were the Mac-donalds, Mac-eachrans, Mac-kays, and Mac-maths.

Mull of Cantyre, the ſouth cape or promontory of the peninſula. There is here a lighthouſe 235 feet above the ſea at high water, ſituated on the rocks called the *Merchants*. Lat. 55. 22. Long. 5. 42. weſt of London. The ſound of Iſla from the lighthouſe bearing, by the compaſs, N. by E. diſtant 27 miles; the ſouth end of Iſla N. N. W. diſtant 25 miles; the north end of Rathlin iſland, N. W. by W. one half W.; the Maiden Rocks, S. by W. one half W. diſtant 14 miles; Copland light, S. by W. one half W. diſtant.

Cantz || Canute

distant 31 miles. The lanthorn is seen from N. N. E. 1-4th E. from S. by W. 1-4th W. and intermediate points of the compass N. of these two points.

CANTZ, a town of Silesia in Germany. E. Long. 16. 36. N. Lat. 51. 6.

CANVAS, in commerce, a very clear unbleached cloth of hemp, or flax, wove regularly in little squares. It is used for working tapestry with the needle, by passing the threads of gold, silver, silk or wool, through the intervals or squares.

Canvas is also a coarse cloth of hemp, unbleached, somewhat clear, which serves to cover women's stays, also to stiffen men's clothes, and to make some other of their wearing apparel, &c.

Canvas is also used among the French for the model or first words whereon an air or piece of music is composed, and given to a poet to regulate and finish. The canvas of a song contains certain notes of the composer, which show the poet the measure of the verses he is to make. Thus Du Lot says, he has canvas for ten sonnets against the Muses.

Canvas is also the name of a cloth made of hemp, and used for ship sails.

Canvas, among painters, is the cloth on which they usually draw their pictures; the canvas being smoothed over with a slick stone, then sized, and afterwards whited over, makes what the painters called their *primed cloth*, on which they draw their first sketches with coal or chalk, and afterwards finish with colours.

CANULA, in *Surgery*, a tube made of different metals, principally of silver and lead, but sometimes of iron.

They are introduced into hollow ulcers, in order to facilitate a discharge of pus or any other substance; or into wounds, either accidental or artificial, of the large cavities, as the thorax or abdomen: they are used in the operation of bronchotomy; and by some, after the cutting for the stone, as a drain for urine.

Other canulas are used for introducing cauteries, either actual or potential, into hollow parts, in order to guard the parts adjacent to that to be cauterized, from injury. They are of various figures; some being oval, some round, and others crooked.

CANUSIUM, in *Ancient Geography*, a town of Apulia, on the right or south side of the Ausidus, to the west of Cannæ, whither the Romans fled after the defeat sustained there. It was famous for its red shining wool; whence those who wore clothes made of it were called *Canusinati*. Now called Canosa; which see.

CANUTE, the first Danish king of England after Ironside. He married Emma widow of King Ethelred; and put to death several persons of quality who stood in his way to the crown. Having thus settled his power in England, he made a voyage to his other kingdom of Denmark, in order to resist the attacks of the king of Sweden; and he carried along with him a great body of the English under the command of the earl of Godwin. This nobleman had here an opportunity of performing a service by which he both reconciled the king's mind to the English nation, and, gaining to himself the friendship of his sovereign, laid the foundation of that immense fortune which he acquired to his family. He was stationed next the Swedish camp; and observing a favourable opportunity which he was obliged suddenly to seize, he attacked the enemy in the night, drove them suddenly from their trenches, threw them into disorder, pursued his advantage, and obtained a decisive victory over them. Next morning, Canute, seeing the English camp entirely abandoned, imagined that these disaffected troops had deserted to the enemy; and he was agreeably surprised to find that they were at that time engaged in pursuit of the discomfited Swedes. He was so pleased with this success, and the manner of obtaining it, that he bestowed his daughter in marriage upon Godwin, and treated him ever after with the most entire confidence and regard. Canute.

In another voyage which he afterwards made to Denmark, Canute attacked Norway, and expelled the just but unwarlike Olaus from his kingdom, of which he kept possession till the death of that prince. He had now by his conquests and valour attained the utmost height of his ambition; and having leisure from wars and intrigues, he felt the unsatisfactory nature of all human enjoyments: and equally weary of the glory and turmoils of this life, he began to cast his view towards that future existence, which it is so natural for the human mind, whether satiated by prosperity, or disgusted with adversity, to make the object of its attention. Unfortunately the spirit which prevailed in that age gave a wrong direction to his devotion; and, instead of making atonement to those whom he had formerly injured by his acts of violence, he entirely employed himself in those exercises of piety, which the monks represented as most meritorious. He built churches; he endowed monasteries; he enriched ecclesiastics; and he bestowed revenues for the support of chantries at Assington and other places, where he appointed prayers to be said for the souls of those who had there fallen in battle against him. He even undertook a pilgrimage to Rome, where he sojourned a considerable time; and, besides obtaining from the pope some privileges for the English school erected there, he engaged all the princes through whose dominions he was obliged to pass, to desist from those heavy impositions and tolls which they were accustomed to exact from the English pilgrims. By this spirit of devotion, no less than by his equitable and politic administration, he gained in a good measure the affections of his subjects.

Canute, who was the greatest and most powerful prince of his time, sovereign of Denmark and Norway as well as of England, could not fail to meet with adulation from his courtiers; a tribute which is liberally paid even to the meanest and weakest of princes. Some of his flatterers breaking out one day in admiration of his grandeur, exclaimed that every thing was possible for him: upon which the monarch, it is said, ordered a chair to be set on the sea shore while the tide was making; and as the waters approached, he commanded them to retire, and obey the voice of him who was lord of the ocean. He feigned to sit some time in expectation of their submission; but when the sea still advanced towards him, and began to wash him with its billows, he turned to his courtiers, and remarked to them, That every creature in the universe was feeble and impotent, and that power resided with one Being alone, in whose hands were all the elements of nature, who could say to the ocean, "Thus far shalt thou go, and no farther," and who could level with his nod the most towering piles of human pride

and

Canzone || Caoutchouc

and ambition. From that time, it is ſaid, he never would wear a crown. He died in the 20th year of his reign; and was interred at Wincheſter, in the old monaſtery.

CANZONE, in *Muſic*, ſignifies, in general, a ſong, where ſome little fugues are introduced; but it is ſometimes uſed for a ſort of Italian poem, uſually pretty long, to which muſic may be compoſed in the ſtyle of a cantata. If this term be added to a piece of inſtrumental muſic, it ſignifies much the ſame as cantata; if placed in any part of a ſonata, it implies the ſame meaning as *allegro*, and only denotes that the part to which it is prefixed is to be played or ſung in a briſk and lively manner.

CANZONETTA, a diminutive of canzone, denoting a little ſhort ſong. The canzonette Neapolitane has two ſtrains, each whereof is ſung twice over, as the vaudevilles of the French. The canzonette Siciliane is a ſpecies of jig, the meaſure whereof is uſually twelve eighths, and ſix eighths, and ſometimes both, as rondeaus.

CAORLO, a ſmall iſland in the gulf of Venice, on the coaſt of Friuli, 20 miles ſouth-weſt of Aquileia, ſubject to Venice. It has a town of the ſame name, with a biſhop's ſee.

CAOUTCHOUC, Elastic Resin, or *India rubber*, a ſubſtance produced from the ſyringe tree of Cayenne and other parts of South America, and poſſeſſed of the moſt ſingular properties. No ſubſtance is yet known which is ſo pliable, and at the ſame time ſo elaſtic; and it is farther a matter of curioſity, as being capable of reſiſting the action of very powerful menſtrua. From the account of M. de la Condamine, we learn that this ſubſtance oozes out, under the form of a vegetable milk, from inciſions made in the tree; and that it is gathered chiefly in time of rain, becauſe, though it may be collected at all times, it flows then moſt abundantly. The means employed to inſpiſſate and indurate it, M. de la Borde ſays, are kept a profound ſecret. M. Bomare, and others, affirm, that it thickens and hardens gradually by being expoſed to the air; and as ſoon as it acquires a ſolid conſiſtence it manifeſts a very extraordinary degree of flexibility and elaſticity. Accordingly the Indians make boots of it which water cannot penetrate, and which, when ſmoked, have the appearance of real leather. Bottles are alſo made of it, to the necks of which are faſtened hollow reeds, ſo that the liquor contained in them may be ſquirted through the reeds or pipes by preſſure. One of theſe filled with water is always preſented to each of the gueſts at their entertainments, who never fail to make uſe of it before eating. This whimſical cuſtom led the Portugueſe in that country to call the tree that produces the reſin *pao di xirringa;* and hence the name of *ſeringat* is given both to the tree and to its reſinous production. Flambeaux, an inch and a half in diameter, and two feet long, are likewiſe made of this reſin, which give a beautiful light, have no bad ſmell, and burn twelve hours. A kind of cloth is alſo prepared from it, which the inhabitants of Quito apply to the ſame purpoſe as our oil cloth and ſail cloth. It is formed, in fine, by means of moulds, into a variety of figures for uſe and ornament; and the proceſs is ſaid to be thus:—The juice, which is obtained by inciſion, is ſpread over pieces of clay formed into the deſired ſhape; and as faſt as one layer is dry, another is added, till the veſſel be of the proper thickneſs: the whole is then held over a ſtrong ſmoke of vegetables on fire, whereby it hardens into the texture and appearance of leather; and before the finiſhing, while yet ſoft, is capable of having any impreſſion made on the outſide, which remains ever after. When the whole is done, the inſide mould is picked out. Caoutchouc

Since this reſin has been known in Europe, its chemical qualities and other intereſting properties have been very diligently inveſtigated. In particular, it has been endeavoured to diſcover ſome method of diſſolving it in ſuch a manner that it would aſſume different figures, with equal eaſe as when in its original ſtate fluid. In the memoirs of the Academy of Sciences for 1768, we have an account of ſeveral attempts for this purpoſe, and how it may be effected.—The ſtate of vegetable milk in which the caoutchouc reſin is found when it comes from the tree, led M. Macquer to imagine that it was compoſed of an oil and a watery matter. From its wanting aromatic flavour, from its little volatility, and from its being incapable of ſolution in ſpirit of wine, he concluded that the oil which entered its compoſition was not an eſſential, but a fatty, one. Hence he thought it probable that it paſſed from a fluid to a ſolid form by the evaporation of the watery part, and that the oily ſolvents would reduce it to a ſoft ſtate. The firſt trials he made for diſſolving it were with linſeed oil, eſſence of turpentine, and ſeveral others. But all he could obtain by means of theſe menſtrua was a viſcid ſubſtance incapable of being hardened, and totally void of elaſticity. The rectified eſſential oil of turpentine was employed ſeemingly with greater ſucceſs. To ſeparate from this menſtruum the caoutchouc which it had diſſolved, M. Macquer added ſpirit of wine; but the conſequence was, that part only of the oil united with the ſpirit; the reſt remaining obſtinately attached to the reſin which it had diſſolved, and thus preventing it from aſſuming a ſolid conſiſtence. The author next endeavoured to diſſolve it by means of heat in Papin's digeſter. But neither water, nor ſpirit of wine, although in this way capable of diſſolving the hardeſt bones, could produce any other effect upon it than to render it more firm than before. After this, he tried what effect the milky juice of other vegetables would have upon it. He uſed ſeveral kinds, particularly that of the fig. But, in this way, he could obtain no ſolution. From the great volatility of ether, he was next induced to try it as a menſtruum; and, for this purpoſe, he prepared ſome with great attention. The caoutchouc, cut into little bits, and put into a proper veſſel with as much ether as was ſufficient to cover it, was perfectly diſſolved without any other heat than that of the atmoſphere. This ſolution was tranſparent and of an amber colour. It ſtill preſerved the ſmell of ether, but mixed with the diſagreeable odour of the caoutchouc, and it is a little leſs fluid than pure ether. Upon its being thrown into water, no milky liquor was produced; but there aroſe to the ſurface a ſolid membrane which poſſeſſed the great elaſticity and other peculiar properties of the caoutchouc. He obſerves, however, that two pints of the beſt ether, obtained by rectifying eight or ten pints of the common ether by a gentle heat, muſt be uſed, in order to the ſucceſs of the operation.—

Caoutchouc ration.—The diſtinguiſhing properties of this ſubſtance, viz. its ſolidity, flexibility, and elaſticity, and its quality of reſiſting the action of aqueous, ſpirituous, ſaline, oily, and other common ſolvents, render it extremely fit for the conſtruction of tubes, catheters, and other inſtruments, in which theſe properties are wanted. In order to form this reſin into ſmall tubes, M. Macquer prepared a ſolid cylindrical mould of wax, of the deſired ſize and ſhape; and then dipping a pencil into the ethereal ſolution of the reſin, daubed the mould over with it, till he had covered it with a coat of reſin of a ſufficient thickneſs. The whole piece is then thrown into boiling water; by the heat of which the wax is ſoon melted, and riſes to the ſurface, leaving the reſinous tube completely formed behind.

Groſſart informs us, that he has ſucceeded very well in employing the eſſential oils of turpentine and lavender as a ſolvent for the elaſtic gum, and thus forming it into tubes or giving it any ſhape that is wanted. When the elaſtic tube is prepared with oil of lavender, the latter may be ſeparated by immerſing the tube in alcohol, which charges itſelf with the oil, and becomes a good lavender water. Alcohol ſerves another purpoſe beſide taking up the eſſential oil. It accelerates very much the drying of caoutchouc inſtruments, which are thus formed. Oil of turpentine appeared always to have a kind of ſtickineſs; and the ſmell which could not be got rid of, by any means yet diſcovered, was another inconvenience.

Groſſart propoſes another ſolvent, which is eaſily procured, and is not liable to the inconvenience juſt mentioned. This ſolvent is *water*. "I conceive (ſays he) it will appear ſtrange to mention water as a ſolvent of elaſtic gum, that liquid having been always ſuppoſed to have no action upon it. I myſelf reſiſted the idea; but reflecting that ether, by being ſaturated with water, is the better enabled to act on caoutchouc, and that this gum when plunged into boiling water becomes more tranſparent at the edges, I preſumed that this effect was not due ſimply to the dilatation of its volume by the heat. I thought that, at that temperature, ſome action might take place, and that a long-continued ebullition might produce more ſenſible effects. I was not diſappointed in my expectations, and one of thoſe tubes was prepared without any other ſolvent than water and heat. I proceeded in the ſame manner as with ether: the elaſtic gum dilates but very little in boiling water; it becomes whitiſh, but recovers its colour again by drying it in the air and light. It is ſufficiently prepared for uſe when it has been a quarter of an hour in boiling water: by this time its edges are ſometimes tranſparent. It is to be turned ſpirally round the mould, in the manner we deſcribed before, and replunged frequently into the boiling water, during the time that is employed in forming the tube, to the end that the edges may be diſpoſed to unite together. When the whole is bound with packthread, it is to be kept ſome hours in boiling water; after which it is to be dried, ſtill keeping on the binding.

"If we wiſh to be more certain that the connexion is perfect, the ſpiral may be doubled; but we muſt always avoid placing the exterior ſurfaces of the ſlips one upon the other, as thoſe ſurfaces are the parts which moſt reſiſt the action of ſolvents. This precaution is leſs neceſſary when ether is employed, on account of its great action upon the caoutchouc. Caoutchouc

"It might be feared that the action of water upon caoutchouc would deprive us of the advantages which might otherwiſe be expected; but theſe fears will be removed, if we conſider that the affinities differ according to the temperatures; that it is only at a very high temperature that water exerciſes any ſenſible action upon caoutchouc. I can affirm, that at 120° of Reaumur's thermometer (302° of Fahrenheit) this affinity is not ſuch as that the water can give a liquid form to caoutchouc; and it does not appear that we have any thing to fear in practice from a combination between theſe two bodies, which, though it really is a true ſolution, does not take place in any ſenſible degree but at a high temperature. It is therefore at preſent eaſy to make of caoutchouc whatever inſtruments it may be advantageous to have of a flexible, ſupple, and elaſtic ſubſtance, which is impermeable to water at the temperature of our atmoſphere, and reſiſts the action of acids as well as that of moſt other ſolvents. As to the durability of theſe inſtruments, few ſubſtances promiſe more than this, becauſe it may be ſoldered afreſh in a damaged part. Any woven ſubſtance may be covered with it; it is only required that the ſubſtance ſhould be of a nature not to be acted upon during the preparation, either by ether or by boiling water; for theſe two agents are thoſe which appear to me to merit the preference. Artiſts will frequently find an advantage in employing ether, as it requires leſs time; ſo that a perſon may make, in a ſingle day, any tube he may have occaſion for. The expence of ether is very little, ſince it is needful only to diſpoſe the caoutchouc to adhere; and being brought into that ſtate, the caoutchouc may be kept in a veſſel perfectly well cloſed. It would alſo diminiſh the expence of the ether, if, inſtead of waſhing it with a large quantity of water, there ſhould be added to it only as much water as it can take up." *Annales de Chimie*, vol. xi. p. 149.

A reſin ſimilar to this was ſome years ago diſcovered by M. Poivre, in the Iſle of France; and there are various milky juices extracted from trees in America and elſewhere, which by previous mixtures and preparations are formed into an elaſtic reſin, but of an inferior quality to that of Cayenne; ſuch, for inſtance, are the juices obtained from the *Cecropia peltata*, the *Ficus religioſa* and *Indica*, &c.

Of the genuine trees, thoſe growing along the banks of the river of the Amazons are deſcribed by M. Condamine as attaining a very great height, being at the ſame time perfectly ſtraight, and having no branches except at top, which is but ſmall, covering no more than a circumference of ten feet. Its leaves bear ſome reſemblance to thoſe of the *manioc*: they are green on the upper part, and white beneath. The ſeeds are three in number, and contained in a pod conſiſting of three cells, not unlike thoſe of the *ricinus* or *palma Chriſti*; and in each of them there is a kernel, which being ſtripped and boiled in water produces a thick oil or fat, anſwering the purpoſe of butter in the cookery of that country.

A method of diſſolving this elaſtic gum without ether, for the purpoſes of a varniſh or the like, is as follows: Take one pound of the ſpirit of turpentine, and

Caoutchouc. a pound of the gum cut into very ſmall pieces; pour the turpentine into a long-necked matraſs, which muſt be placed in a ſand bath; throw in the gum, not all at once, but by little and little according as it is perceived to diſſolve: When it is entirely diſſolved, pour into the matraſs a pint of nut or linſeed oil, or oil of poppies, rendered deſiccative in the uſual manner with litharge: Then let the whole boil for a quarter of an hour, and the preparation is finiſhed. This would make an excellent varniſh for air balloons, were it not ſo expenſive on account of the price of the gum. —Another method, invented by Mr Baldwin, is as follows. Take any quantity of the caoutchouc, as two ounces avoirdupois: cut it into ſmall bits with a pair of ſciſſars. Put a ſtrong iron ladle (ſuch as plumbers or glaziers melt their lead in) over a common pit-coal or other fire. The fire muſt be gentle, glowing, and without ſmoke. When the ladle is hot, much below a red heat, put a ſingle bit into the ladle. If black ſmoke iſſues, it will preſently flame and diſappear; or it will evaporate without flame: the ladle is then too hot. When the ladle is leſs hot, put in a ſecond bit, which will produce a white ſmoke. This white ſmoke will continue during the operation, and evaporate the caoutchouc: therefore no time is to be loſt; but little bits are to be put in, a few at a time, till the whole are melted. It ſhould be continually and gently ſtirred with an iron or braſs ſpoon. Two pounds, or one quart, of the beſt drying oil (or of raw linſeed oil, which, together with a few drops of neats foot oil, has ſtood a month, or not ſo long, on a lump of quicklime, to make it more or leſs drying) is to be put into the melted caoutchouc, and ſtirred till hot: and the whole poured into a glazed veſſel, through a coarſe gauze, or fine ſieve. When ſettled and clear, which will be in a few minutes, it is fit for uſe, either hot or cold.

The Abbé Clavigero informs us, that the elaſtic gum is called by the Mexicans *Olin* or *Olli*, and by the Spaniards of that kingdom *Ule*: That it diſtils from the olquahuitl, which is a tree of moderate ſize; the trunk of which is ſmooth and yellowiſh, the leaves pretty large, the flowers white, and the fruit yellow and rather round, but angular; within which there are kernels as large as filberts, and white, but covered with a yellowiſh pellicle: That the kernel has a bitter taſte, and the fruit always grows attached to the bark of the tree: That when the trunk is cut, the ule which diſtils from it is white, liquid, and viſcous; afterwards it becomes yellow; and laſtly of a leaden colour, though rather blacker, which it always retains. The tree, he adds, is very common in the kingdom of Guatimala.

Different trees, it would appear, yield the elaſtic gum. Aublet, in his *Hiſtoire des Plantes de la Guiane* (p. 871.), deſcribes the tree, the fruit, and manner of collecting the juice; but never ſaw the flower: he calls it, however, *Hevea Guianenſis*. In Jacquin's America, it is called *Echites Corymboſa*. The younger Linnæus, in his *Supplementum Plantarum* (p. 422), names it *Jatropha Elaſtica;* but acknowledges that he only gives it this name from the ſtructure of the fruit having moſt reſemblance to that genus, his dry ſpecies wanting the flowers.

Of the above gum, it is ſaid, the Chineſe make elaſtic rings for laſcivious purpoſes.—Among us it is uſed by ſurgeons for injecting liquids, and by painters for rubbing out black lead pencil marks, &c. Cap.

CAP, a part of dreſs made to cover the head, much in the figure thereof.

The uſe of caps and hats is referred to the year 1449, the firſt ſeen in theſe parts of the world being at the entry of Charles VII. into Rouen: from that time they began to take place of the hoods, or chaperoons, that had been uſed till then. When the cap was of velvet, they called it *mortier;* when of wool, ſimply *bonnet*. None but kings, princes, and knights, were allowed the uſe of the mortier. The cap was the head dreſs of the clergy and graduates. Paſquier ſays, that it was anciently a part of the hood worn by the people of the robe; the ſkirts whereof being cut off as an encumbrance, left the round cap an eaſy commodious cover for the head; which round cap being afterwards aſſumed by the people, thoſe of the gown changed it for a ſquare one, firſt invented by a Frenchman, called Patrouillet: he adds, that the giving of the cap to the ſtudents in the univerſities, was to denote, that they had acquired full liberty, and were no longer ſubject to the rod of their ſuperiors; in imitation of the ancient Romans, who gave a *pileus*, or cap, to their ſlaves, in the ceremony of making them free: whence the proverb, *Vocare ſervos ad pileum*. Hence, alſo, on medals, the cap is the ſymbol of Liberty, whom they repreſent holding a cap in her right hand, by the point.

The Romans were many ages without any regular covering for the head: when either the rain or ſun was troubleſome, the lappet of the gown was thrown over the head; and hence it is that all the ancient ſtatues appear bareheaded, excepting ſometimes a wreath, or the like. And the ſame uſage obtained among the Greeks, where, at leaſt during the heroic age, no caps were known. The ſort of caps or covers of the head in uſe among the Romans on divers occaſions, were the *pitra*, *pileus*, *cucullus*, *galerus*, and *palliolum;* the differences between which are often confounded by ancient as well as modern writers.

The French clergy wear a ſhallow kind of cap, called *calotte*, which only covers the top of the head, made of leather, ſatin, worſted, or other ſtuff. The red cap is a mark of dignity allowed only to thoſe who are raiſed to the cardinalate. The ſecular clergy are diſtinguiſhed by black leathern caps, the regulars by knit and worſted ones.

Churchmen, and the members of univerſities, ſtudents in law, phyſic, &c. as well as graduates, wear ſquare caps. In moſt univerſities doctors are diſtinguiſhed by peculiar caps, given them in aſſuming the doctorate. Wickliff calls the canons of his time *bifurcati*, from their caps. Paſquier obſerves, that, in his time, the caps worn by the churchmen, &c. were called ſquare caps; though, in effect, they were round yellow caps.

The Chineſe have not the uſe of the hat, like us; but wear a cap of a peculiar ſtructure, which the laws of civility will not allow them to put off: it is different for the different ſeaſons of the year: that uſed in ſummer is in form of a cone, ending at top in a point. It is made of a very beautiful kind of mat, much valued in that country, and lined with ſatin: to this is

Cap. added, at top, a large lock of red ſilk, which falls all round as low as the bottom; ſo that, in walking, the ſilk fluctuating regularly on all ſides, makes a graceful appearance: ſometimes, inſtead of ſilk, they uſe a kind of bright red hair, the luſtre whereof no weather effaces. In winter they wear a pluſh cap, bordered with martlet's or fox's ſkin; as to the reſt, like thoſe for the ſummer. Theſe caps are frequently ſold for eight or ten crowns; but they are ſo ſhort, that the ears are expoſed.

The cap is ſometimes uſed as a mark of infamy; in Italy the Jews are diſtinguiſhed by a yellow cap; at Lucca by an orange one. In France, thoſe who had been bankrupts were obliged ever after to wear a green cap, to prevent people from being impoſed on in any future commerce. By ſeveral arrets in 1584, 1622, 1628, 1688, it was decreed, that if they were at any time found without their green cap, their protection ſhould be null, and their creditors empowered to caſt them into priſon: but the ſentence is not now executed.

Cap *of Maintenance*, one of the regalia, or ornaments of ſtate, belonging to the kings of England, before whom it was carried at the coronation and other great ſolemnities. Caps of maintenance are alſo carried before the mayors of the ſeveral cities in England.

Cap and Button, are two ſmall iſlands, lying in longitude 105° 48′ 30″ eaſt; and in latitude, the former 5° 58′ 30″, the latter 5° 49′ ſouth. They are thus deſcribed by Sir George Staunton.

"At a little diſtance they might be miſtaken for the remains of old caſtles, mouldering into heaps of ruins, with tall trees already growing upon the tops; but at a nearer view, they betrayed evident marks of a volcanic origin. Exploſions from ſubterraneous fires, produce, for the moſt part, hills of a regular ſhape, and terminating in truncated cones; but when from a ſubaqueous volcano eruptions are thrown up above the ſurface of the ſea, the materials, falling back into the water, are more irregularly diſperſed, and generally leave the ſides of the new creation naked and miſhapen, as in the inſtance of Amſterdam, and of thoſe ſmaller ſpots called, from ſome reſemblance in ſhape, the Cap and Button.

"In the Cap were found two caverns, running horizontally into the ſide of the rock; and in theſe were a number of thoſe birds neſts ſo much prized by the Chineſe epicures. They ſeemed to be compoſed of fine filaments cemented together by a tranſparent viſcous matter, not unlike what is left by the foam of the ſea upon ſtones alternately covered by the tide, or thoſe gelatinous animal ſubſtances found floating on every coaſt. The neſts adhere to each other, and to the ſides of the cavern, moſtly in rows, without any break or interruption. The birds that build theſe neſts are ſmall gray ſwallows, with bellies of a dirty white. They were flying about in conſiderable numbers; but they were ſo ſmall, and their flight ſo quick, that they eſcaped the ſhot fired at them. The ſame neſts are ſaid alſo to be found in deep caverns, at the foot of the higheſt mountains in the middle of Java, and at a diſtance from the ſea, from which the birds, it is thought, derive no materials, either for their food or the conſtruction of their neſts; as it does not appear probable they ſhould fly, in ſearch of either, over the intermediate mountains, which are very high, or againſt the boiſterous winds prevailing thereabouts. They feed on inſects, which they find hovering over ſtagnated pools between the mountains, and for catching which their wide-opening beaks are particularly adapted. They prepare their neſts from the beſt remnants of their food. Their greateſt enemy is the kite, who often intercepts them in their paſſage to and from the caverns, which are generally ſurrounded with rocks of gray limeſtone or white marble. The neſts are placed in horizontal rows at different depths, from 50 to 500 feet. The colour and value of the neſts depend on the quantity and quality of the inſects caught, and perhaps alſo on the ſituation where they are built. Their value is chiefly determined by the uniform fineneſs and delicacy of their texture; thoſe that are white and tranſparent being moſt eſteemed, and fetching often in China their weight in ſilver. Theſe neſts are a conſiderable object of traffic among the Javaneſe, and many are employed in it from their infancy. The birds having ſpent near two months in preparing their neſts, lay each two eggs, which are hatched in about fifteen days. When the young birds become fledged, it is thought time to ſeize upon their neſts, which is done regularly thrice a-year, and is effected by means of ladders of bamboo and reeds, by which the people deſcend into the cavern; but when it is very deep, rope ladders are preferred. This operation is attended with much danger; and ſeveral break their necks in the attempt. The inhabitants of the mountains generally employed in it begin always by ſacrificing a buffalo; which cuſtom is conſtantly obſerved by the Javaneſe on the eve of every extraordinary enterpriſe. They alſo pronounce ſome prayers, anoint themſelves with ſweet-ſcented oil, and ſmoke the entrance of the cavern with gum-benjamin. Near ſome of thoſe caverns a tutelar goddeſs is worſhipped, whoſe prieſt burns incenſe, and lays his protecting hands on every perſon preparing to deſcend into the cavern. A flambeau is carefully prepared at the ſame time, with a gum which exudes from a tree growing in the vicinity, and is not eaſily extinguiſhed by fixed air or ſubterraneous vapours. The ſwallow, which builds thoſe neſts, is deſcribed as not having its tail feathers marked with white ſpots, which is a character attributed to it by Linnæus; and it is poſſible that there are two ſpecies or varieties of the ſwallow, whoſe neſts are alike valuable †."

† *Embaſſy to China.*

Cap, in ſhip-building, a ſtrong thick block of wood, uſed to confine two maſts together, when one is erected at the head of the other in order to lengthen it. It is for this purpoſe furniſhed with two holes perpendicular to its length and breadth, and parallel to its thickneſs: one of theſe is ſquare, and the other round: the former being ſolidly fixed upon the upper end of the lower maſt, whilſt the latter receives the maſt employed to lengthen it, and ſecures it in this poſition.

CAPACIO, an epiſcopal town of Italy, in the kingdom of Naples, and in the hither Principato. E. Long. 15. 18. N. Lat. 40. 40.

Capacio, Capacity.

CAPACITY, in a general ſenſe, an aptitude or diſpoſition to hold or retain any thing.

Capacity, in *Geometry*, is the ſolid contents of any body;

Capacity || Capell.

body; alſo our hollow meaſures for wine, beer, corn, ſalt, &c. are called *meaſures of capacity*.

CAPACITY, in *Law*, the ability of a man, or body politic, to give or take lands or other things, or ſue actions.

Our law allows the king two capacities; a natural, and a political: in the firſt, he may purchaſe lands to him and his heirs; in the ſecond, to him and his ſucceſſors. The clergy of the church of England have the like.

CAPARASON, or CAPARISON, the covering or clothing laid over a horſe; eſpecially a ſumpter horſe, or horſe of ſtate. The word is Spaniſh, being an augmentative of *cape*, *caput*, *head*.

Anciently the caparaſons were a kind of iron armour, wherewith horſes were covered in battle.

CAPE, in *Geography*, a high land running out with a point into the ſea, as Cape Nord, Cape Horn, the Cape of Good Hope, &c.

CAPE *Elk*. See CERVUS, MAMMALIA *Index*.

CAPE *Breton*. See BRETON.

CAPE-*Coaſt Caſtle*. See COAST.

CAPE *of Good Hope*. See GOOD HOPE.

CAPE *Verd*. See VERD.

CAPELL, EDWARD, a gentleman well known by his indefatigable attention to the works of Shakeſpeare, was a native of the county of Suffolk, and received his education at the ſchool of St Edmund's Bury. In the dedication of his edition of Shakeſpeare, in 1768, to the duke of Grafton, he obſerves; that "his father and the grandfather of his grace, were friends, and to the patronage of the deceaſed nobleman he owed the leiſure which enabled him to beſtow the attention of 20 years on that work." The office which his grace beſtowed on Mr Capell was that of deputy-inſpector of the plays, to which a ſalary is annexed of 200l. a-year. So early as the year 1745, as Mr Capell himſelf informs us, ſhocked at the licentiouſneſs of Hanmer's plan, he firſt projected an edition of Shakeſpeare, of the ſtricteſt accuracy, to be collated and publiſhed in due time, *ex fide codicum*. He immediately proceeded to collect and compare the oldeſt and ſcarceſt copies; noting the original excellencies and defects of the rareſt quartos, and diſtinguiſhing the improvements or variations of the firſt, ſecond, and third folios: and after many years labour produced a very beautiful ſmall octavo, in 10 volumes, with an "Introduction." There is not, the authors of the Monthly Review obſerve, among the various publications of the preſent literary era, a more ſingular compoſition than that "Introduction." In ſtyle and manner it is more obſolete and antique than the age of which it treats. It is Lord Herbert of Cherbury, walking the new pavement in all the trappings of romance; but, like Lord Herbert, it diſplays many valuable qualities accompanying this air of extravagance, much ſound ſenſe, and appropriate erudition. In the title-page of "Mr William Shakeſpeare, his Comedies, Hiſtories, and Tragedies," it was alſo announced and promulgated, "Whereunto will be added, in ſome other volumes, notes critical and explanatory, and a body of various readings entire." "The Introduction" likewiſe declared, that theſe "notes and various readings" would be accompanied with another work, diſcloſing the ſources from which Shakeſpeare "drew the greater part of his knowledge in mythological and claſſical matters, his fable, his hiſtory, and even the ſeeming peculiarities of his language—to which," ſays Mr Capell, "we have given for title, The School of Shakeſpeare." Nothing ſurely could be more properly conceived than ſuch deſigns; nor have we ever met with any thing better grounded on the ſubject of "the learning of Shakeſpeare" than what may be found in the long note to this part of Mr Capell's Introduction. It is more ſolid than even the popular "Eſſay" on this topic. Certain quaintneſſes of ſtyle, and peculiarities of printing and punctuation, attended the whole of this publication. The outline, however, was correct; and the critic, with unremitting toil, proceeded in his undertaking. But while he was diving into the claſſics of Caxton (to continue the Reviewers account), and working his way under ground, like the river Mole, in order to emerge with all his glories; while he was looking forward to his triumphs, certain other active ſpirits went to work upon his plan; and, digging out the promiſed treaſures, laid them prematurely before the public, defeating the effect of our critic's diſcoveries by anticipation. Steevens, Malone, Farmer, Percy, Reed, and a whole hoſt of literary ferrets, burrowed into every hole and corner of the warren of modern antiquity, and overran all the country, whoſe map had been delineated by Edward Capell. Such a contingency nearly ſtaggered the ſteady and unſhaken perſeverance of our critic, at the very eve of the completion of his labours, and as his editor informs us—for, alas! at the end of near 40 years, the publication was poſthumous, and the critic himſelf no more!—he was almoſt determined to lay the work wholly aſide. He perſevered, however, by the encouragement of ſome noble and worthy perſons; and to ſuch their encouragement, and his perſeverance, the public was, in 1783, indebted for three large volumes in 4to, under the title of "Notes and various readings of Shakeſpeare; together with the School of Shakeſpeare, or Extracts from divers Engliſh Books, that were in print in the Author's time; evidently ſhowing from whence his ſeveral Fables were taken, and ſome parcel of his Dialogue. Alſo farther Extracts, which contribute to a due underſtanding of his Writings, or give a light to the Hiſtory of his Life, or to the Dramatic Hiſtory of his Time. By Edw. Capell."—Beſides the works already mentioned, Mr Capell was the editor of a volume of ancient poems called "Proluſions;" and the alteration of "Anthony and Cleopatra," as acted at Drury Lane in 1758. He died January 24. 1781.

Capell || Capellus.

CAPELLA, in *Aſtronomy*, a bright fixed ſtar in the left ſhoulder of the conſtellation Auriga.

CAPELLE, a town of France, in Picardy, and in the Tierache, eight miles from Guiſe. It was taken by the Spaniards in 1636; but retaken the year after. E. Long. 3. 59. N. Lat. 49. 58.

CAPELLETS. See FARRIERY *Index*.

CAPELLUS, LEWIS, an eminent French Proteſtant divine, born at Sedan in Champagne about the year 1579. He was author of ſome learned works: but is chiefly known from the controverſy he engaged in with the younger Buxtorf concerning the antiquity of Hebrew points, which Capellus undertook to diſprove. His *Critica Sacra* was alſo an elaborate work,

Caper || Caperolans.

and excited ſome diſputes. He died in 1658, having made an abridgement of his life in his work *De gente Capellori*.

CAPER. See CAPPARIS, BOTANY *Index*.

CAPER alſo denotes a veſſel uſed by the Dutch for cruiſing and taking prizes from the enemy; in which ſenſe, caper amounts to the ſame with privateer. Capers are commonly double officered, and crowded with hands even beyond the rates of ſhips of war, becauſe the thing chiefly in view is boarding the enemies.

CAPERNAUM, a city celebrated in the Goſpels, being the place where Jeſus uſually reſided during the time of his miniſtry. This city is nowhere mentioned in the Old Teſtament under this or any other name like it; and therefore it is not improbable that it was one of thoſe towns which the Jews built after their return from the Babyloniſh captivity. It ſtood on the ſea coaſt, i. e. on the coaſt of the ſea of Galilee, in the borders of Zebulon and Nephtalim (Mat. iv. 15.), and conſequently towards the upper part thereof. It took its name no doubt from an adjacent ſpring, of great repute for its clear and limpid water; and which, according to Joſephus, was by the natives called *Capernaum*. As this ſpring might be ſome inducement to the building the town in the place where it ſtood, ſo its being a convenient wafting place from Galilee to any part on the other ſide of the ſea, might be ſome motive to our Lord for his moving from Nazareth, and making this the place of his moſt conſtant reſidence. Upon this account Capernaum was highly honoured, and ſaid by our Lord himſelf to be *exalted unto heaven;* but becauſe it made no right uſe of this ſignal favour, it drew from him the ſevere denunciation, that it ſhould *be brought down to hell* (Matt. xi. 23.), which has certainly been verified: for, as Dr Wells obſerves, ſo far is it from being the metropolis of all Galilee, as it once was, that it conſiſted long ſince of no more than ſix poor fiſhermen's cottages, and may perhaps be now totally deſolate.

CAPEROLANS, a congregation of religious in Italy, ſo called from Peter Caperole their founder, in the 15th century.

The Milaneſe and Venetians being at war, the enmity occaſioned thereby ſpread itſelf to the very cloiſters. The ſuperiors of the province of Milan, of minor brothers, which extended itſelf as far as the territories of the republic of Venice, carried it ſo haughtily over the Venetians, that thoſe of the convent of Breſcia reſolved to ſhake off a yoke which was grown inſupportable to them. The ſuperiors, informed of this, expelled out of the province thoſe whom they conſidered as the authors of this deſign; the principal of whom were Peter Caperole, Matthew de Tharvillo, and Bonaventure of Breſcia. Peter Caperole, a man of an enterpriſing genius, found means to ſeparate the convents of Breſcia, Bergamo, and Cremona, from the province of Milan, and ſubject them to the conventuals. This occaſioned a law ſuit between the vicar general and theſe convents, which was determined in favour of the latter; and theſe convents, in 1475, by the authority of Pope Sixtus IV. were erected into a diſtinct vicariate, under the title of that of *Breſcia*. This not ſatisfying the ambition of Caperole, he obtained, by the interpoſition of the doge of Venice, that this vicariate might be erected into a congregation, which was called from him *Caperolans*. This congregation ſtill ſubſiſts in Italy, and is compoſed of 24 convents, ſituated in Breſcia, Bergamo, and Cremaſco.

Capequin || Capias.

CAPEQUIN, a town of Ireland, in the county of Waterford, and province of Munſter, ſituated on the river Blackwater. W. Long. 7. 50. N. Lat. 52. 5.

CAPESTAN, a town of France, in Lower Languedoc, in the dioceſe of Narbonne, and near the royal canal. E. Long. 3. 5. N. Lat. 43 35.

CAPH, a Jewiſh meaſure of capacity for things, eſtimated by Kimchi at the 30th part of the log, by Arbuthnot at the 16th part of the hin or 32d of the ſeah, amounting to five-eighths of an Engliſh pint. The caph does not occur in Scripture as the name of any meaſure.

CAPHAR, a duty which the Turks raiſed on the Chriſtians who carry or ſend merchandiſes from Aleppo to Jeruſalem and other places in Syria.

This duty of caphar was firſt impoſed by the Chriſtians themſelves, when they were in poſſeſſion of the Holy Land, for the maintenance of the troops which were planted in difficult paſſes to obſerve the Arabs and prevent their incurſions. It is ſtill continued, and much increaſed by the Turks, under pretence of defending the Chriſtians againſt the Arabs; with whom, nevertheleſs, they keep a ſecret intelligence, favouring their excurſions and plunders.

CAPHTOR, in *Ancient Geography*, a town or diſtrict of Higher Egypt: and hence the people called *Caphtorim* or *Caphtorei*.—Caphtor is an iſland of Egypt, Ai Caphtor, (Jeremiah); probably one of thoſe in the Nile. Dr Wells ſuppoſes it to be Coptos, which ſtood in a ſmall iſland. Thence came the *Caphtorim* or *Caphtoraei*, in Paleſtine; who with the Philiſtines conſpired to extirpate the Hevaei; and whoſe name was ſwallowed up in that of the Philiſtines.

CAPI-AGA, or CAPI-*Agaſſi*, a Turkiſh officer who is governor of the gates of the ſeraglio, or grand maſter of the ſeraglio.

The capi-aga is the firſt dignity among the white eunuchs: he is always near the perſon of the grand ſignior: he introduces ambaſſadors to their audience: nobody enters or goes out of the grand ſignior's apartment but by his means. His office gives him the privilege of wearing the turban in the ſeraglio, and of going everywhere on horſeback. He accompanies the grand ſignior to the apartment of the ſultanas, but ſtops at the door without entering. His appointment is very moderate; the grand ſignior bears the expence of his table, and allows him at the rate of about ſixty French livres per day; but his office brings him in abundance of preſents; no affair of conſequence coming to the emperor's knowledge without paſſing through his hand. The capi-aga cannot be baſhaw when he quits his poſt.

CAPIAS, in *Law*, a writ of two ſorts; one before judgment in an action, and the other after. That before judgment is called *capias ad reſpondendum*, where an original is iſſued out, to take the defendant, and make him anſwer the plaintiff. That after judgment is of divers kinds; as,

CAPIAS *ad Satisfaciendum*, a writ of execution that iſſues on a judgment obtained, and lies where any perſon recovers in a perſonal action, as for debt, damages, &c.

Capias || Capillary.

&c. in which cases this writ issues to the sheriff, commanding him to take the body of him against whom the debt is recovered, who is to be kept in prison till he makes satisfaction.

Capias *pro Fine* is a writ lying where a person is fined to the king, for some offence committed against a statute, and he does not discharge the fine according to the judgment; therefore his body shall be taken by this writ, and committed to gaol till the fine is paid.

Capias *Utlegatum*, a writ which lies against any one outlawed, upon any action personal or criminal, by which the sheriff is ordered to apprehend the party outlawed, for not appearing on the exigent, and keep him in safe custody till the day of return, when he is ordered to present him to the court, to be there farther ordered for his contempt.

Capias *in Withernam*, a writ that lies for cattle *in withernam*: that is, where a distress taken is driven out of the county, so that the sheriff cannot make deliverance upon a replevin; then this writ issues, commanding the sheriff to take as many beasts of the distrainer, &c.

CAPIGI, a porter or doorkeeper of the Turkish seraglio. There are about five hundred *capigis* or porters in the seraglio, divided into two companies; one consisting of three hundred, under a chief called *Capigi-Bassa*, who has a stipend of three ducats per day; the other consists of two hundred, distinguished by the name of *Cuccicapigi*, and their chief *Cuccicapigi-Bassa*, who has two ducats. The capigis have from seven to fifteen aspers per day; some more, others less. Their business is to assist the janizaries in the guard of the first and second gates of the seraglio; sometimes all together; as when the Turk holds a general council, receives an ambassador, or goes to the mosque; and sometimes only in part; being ranged on either side to prevent people entering with arms, any tumults being made, &c. The word, in its original, signifies, *gate*.

CAPILLAMENT, in a general sense, signifies a hair: whence the word is applied to several things, which on account of their length or their fineness resemble hairs: as,

Capillaments *of the Nerves*, in *Anatomy*, the fine fibres or filaments whereof the nerves are composed.

CAPILLARY, in a general sense, an appellation given to things on account of their extreme fineness or resembling hair.

Capillary *Tubes*, in *Physics*, are small pipes of glass, whose canals are extremely narrow, their diameter being only a half, a third, or a fourth of a line.

The ascent of water, &c. in capillary tubes, is a phenomenon that has long embarrassed the philosophers; for let one end of a glass tube open at both extremities be immerged in water, the liquor within the tube will rise to a considerable height above the external surface: or if two or more tubes are immerged in the same fluid, one a capillary tube, and the other of a larger bore, the fluid will ascend higher in the former than in the latter; and this will be in a reciprocal ratio of the diameters of the tubes.

In order to account for this phenomenon, it will be necessary first to premise, that the attraction between the particles of glass and water is greater than the attraction between the particles of water themselves: for if a glass tube be placed in a position parallel to the horizon, and a drop of water be applied to the under side of the tube, it will adhere to it: nor will it fall from the glass till its bulk and gravity are so far increased, as to overcome the attraction of the glass. Hence it is easy to conceive how sensibly such a power must act on the surface of a fluid, not viscid, as water, contained within the small cavity or bore of a glass tube; as also that it will be proportionably stronger as the diameter of the bore is smaller; for it will be evident that the efficacy of the power is in the inverse proportion of the diameter, when it is considered, that such particles only as are in contact with the fluid, and those immediately above the surface, can effect it.

Capillary || Capilupi.

Now these particles form a periphery contiguous to the surface, the upper part of which attracts and raises the surface, while the lower part, which is in contact with it, supports it: so that neither the thickness nor length of the tube is of any consequence here; the periphery of particles only, which is always proportionable to the diameter of the bore, is the only acting power. The quantity of the fluid raised will therefore be as the surface of the bore which it fills, that is, as the diameter; for otherwise the effect would not be proportional to the cause, since the quantities are always as the ratio of the diameters; the heights therefore to which the fluids will rise, in different tubes, will be inversely as the diameters.

Some doubt whether the law holds throughout, of the ascent of the fluid being always higher as the tube is smaller; Dr Hook's experiments, with tubes almost as fine as cobwebs, seem to show the contrary. The water in these, he observes, did not rise so high as one would have expected. The highest he ever found it, was at 21 inches above the level of the water in the bason; which is much short of what it ought to have been by the law above mentioned. See Cohesion.

Capillary *Vessels*. Many small vessels of animal bodies have been discovered by the modern invention of injecting the vessels of animals with a coloured fluid, which upon cooling grows hard. But though most anatomists know the manner of filling the large trunks, few are acquainted with the art of filling the capillaries. Dr Monro, in the Medical Essays, has given what after many trials he has found most successful. See Injection.

CAPILLUS veneris. See Adiantum, Botany *Index*.

CAPILUPI, or Capilupus, Camillus, a native of Mantua in the 16th century. He wrote a book, entitled, *The Stratagem*; in which he relates not only what was perpetrated at Paris during the massacre on St Bartholomew's day, but also the artful preparations which preceded that horrid massacre. It is, however, blended with a great number of falsities.

Capilupi, *Lælius*, an Italian poet, brother to the former, made himself famous by some Centos of Virgil. The manner in which he applied Virgil's expressions to represent things which the poet never dreamt of, is admired. His Cento against women is very ingenious, but too satirical. The poems of Capilupi are inserted in the *Deliciæ Poetarum Italorum*.

CAPISCOLUS,

Capiſcolus || Capitanata.

CAPISCOLUS, or CAPISCHOLUS, in eccleſiaſtical writers, denotes a dignitary in certain cathedrals, who had the ſuperintendency of the choir, or band of muſic, anſwering to what in other churches is called *chanter* or *precentor*. The word is alſo written *cabiſcolus*, and *caputſcholæ*, q. d. the head of the ſchool, or band of muſic.

The capiſcolus is alſo called *ſcolaſticus*, as having the inſtruction of the young clerks and choriſters, how to perform their duty.

CAPITA, DISTRIBUTION BY, in *Law*, ſignifies the appointing to every man an equal ſhare of a perſonal eſtate; when all the claimants claim in their own rights, as in equal degrees of kindred, and not *jure repreſentationis*.

CAPITA, *Succeſſion by*, where the claimants are next in degree to the anceſtor, in their own right, and not by right of repreſentation.

CAPITAL, of the Latin *caput* "the head," is uſed, on various occaſions, to expreſs the relation of a head, chief, or principal: thus,

CAPITAL *City*, in *Geography*, denotes the principal city of a kingdom, ſtate, or province.

CAPITAL *Stock*, among merchants, bankers, and traders, ſignifies the ſum of money which individuals bring to make up the common ſtock of a partnerſhip when it is firſt formed. It is alſo ſaid of the ſtock which a merchant at firſt puts into trade for his account. It likewiſe ſignifies the fund of a trading company or corporation, in which ſenſe the word ſtock is generally added to it. Thus we ſay, the capital ſtock of the bank, &c. The word capital is oppoſed to that of profit or gain, though the profit often increaſes the capital, and becomes of itſelf part of the capital, when joined with the former.

CAPITAL *Crime*, ſuch a one as ſubjects the criminal to capital puniſhment, that is, to loſs of life *.

* See *Crime* and *Puniſhment*.

CAPITAL *Picture*, in *Painting*, denotes one of the fineſt and moſt excellent pieces of any celebrated maſter.

CAPITAL *Letters*, in *Printing*, large or initial letters, wherein titles, &c. are compoſed; with which all periods, verſes, &c. commence; and wherewith alſo all proper names of men, kingdoms, nations, &c. begin. The practice which, for ſome time, obtained among our printers, of beginning every ſubſtantive with a capital, is now juſtly fallen into diſrepute; being a manifeſt perverſion of the deſign of capitals, as well as an offence againſt beauty and diſtinctneſs.

CAPITAL, in *Architecture*, the uppermoſt part of a column or pilaſter, ſerving as the head or crowning, and placed immediately over the ſhaft, and under the entablature. See ARCHITECTURE.

CAPITANA, or CAPTAIN *Galley*, the chief or principal galley of a ſtate, not dignified with the title of a kingdom. The capitana was anciently the denomination of the chief galley of France, which the commander went on board of. But ſince the ſuppreſſion of the office of captain general of the galleys in 1669, they have no capitana, but the firſt galley is called *reale*, and the ſecond *parone*.

CAPITANATA, one of the 12 provinces of the kingdom of Naples, in Italy, bounded on the north by the gulf of Venice, on the eaſt by the Terra di Bari, on the ſouth by the Baſilicata and the Farther Principato, and on the weſt by the county di Moliſe and a ſmall part of Hither Abruzzo. It is a level country, without trees; the ſoil ſandy, the air hot: the land, however, near the rivers, is fertile in paſtures. The capital town is Manfredonia. Capitaneate || Capitol.

CAPITANEATE, in a general ſenſe, the ſame with capitania. Capitaneates, in Pruſſia, are a kind of noble feuds or eſtates, which, beſides their revenue, raiſe their owners to the rank of nobility. They are otherwiſe called *ſtaroſties*.

CAPITANEI, or CATANEI, in Italy, was a denomination given to all the dukes, marquiſes, and counts, who were called *capitanei regis*. The ſame appellation was alſo given to perſons of inferior rank who were inveſted with fees, formerly diſtinguiſhed by the appellation *valaſores majores*.

CAPITANEUS, in ancient law writers, denotes a tenant in capite, or chief.

CAPITANEUS *Eccleſiæ*, the ſame with advocate.

CAPITANIA, in *Geography*, an appellation given to the 12 governments eſtabliſhed by the Portugueſe in the Braſils.

CAPITATION, a tax or impoſition raiſed on each perſon, in proportion to his labour, induſtry, office, rank, &c. It is a very ancient kind of tribute. The Latins call it *tributum*, by which taxes on perſons are diſtinguiſhed from taxes on merchandiſe, which were called *vectigalia*.

Capitations are never practiſed among us but in exigencies of ſtate. In France the capitation was introduced by Louis XIV. in 1695; and is a tax very different from the *taille*, being levied from all perſons, whether they be ſubject to the taille or not. The clergy pay no capitation, but the princes of the blood are not exempted from it.

CAPITE, in law, (from *caput*, i. e. *rex*; whence *tenere in capite*, is to hold of the *king*, the *head* or lord paramount of all the lands in the kingdom): An ancient tenure of land, held immediately of the king, as of the crown, either by knight's ſervice, or by ſoccage. It is now aboliſhed. See TENURE.

CAPITE *Cenſi*, in antiquity, the loweſt rank of Roman citizens, who in public taxes were rated the leaſt of all, being ſuch as never were worth above 365 aſſes. They were ſuppoſed to have been thus called, becauſe they were rather counted and marſhalled by their heads than by their eſtates. The *capite cenſi* made part of the ſixth claſs of citizens, being below the *proletarii*, who formed the other moiety of that claſs. They were not enrolled in the army, as being judged not able to ſupport the expence of war; for in thoſe days the ſoldiers maintained themſelves. It does not appear that before Caius Marius any of the Roman generals liſted the *capite cenſi* in their armies.

CAPITOL, CAPITOLIUM, in *Antiquity*, a famous fort or caſtle, on the Mons Capitolinus at Rome, wherein was a temple dedicated to Jupiter, thence alſo denominated *Capitolinus*, in which the ſenate anciently aſſembled; and which ſtill ſerves as the city hall, or townhouſe, for the meeting of the conſervators of the Roman people.—It had its name *capitol*, from *caput*, "a man's head," ſaid to have been found freſh, and yet bleeding, upon digging the foundation of the temple built in honour of Jupiter. Arnobius adds, that the man's name was *Tolus*, whence *caput tolium*.—The firſt foundations

Capitoline ‖ Capitoul

foundations of the capitol were laid by Tarquin the Elder, in the year of Rome 139. His ſucceſſor Servius raiſed the walls; and Tarquin the Proud finiſhed it in the year 221. But it was not conſecrated till the third year after the expulſion of the kings, and eſtabliſhment of the conſulate. The ceremony of the dedication of the temple was performed by the conſul Horatius in 246.

The capitol conſiſted of three parts; a nave ſacred to Jupiter, and two wings, the one conſecrated to Juno, the other to Minerva: it was aſcended to by ſtairs; the frontiſpiece and ſides were ſurrounded with galleries, in which thoſe who were honoured with triumphs entertained the ſenate at a magnificent banquet, after the ſacrifice had been offered to the gods.

Both the inſide and outſide were enriched with an infinity of ornaments, the moſt diſtinguiſhed of which was the ſtatue of Jupiter with his golden thunderbolt, his ſceptre, and crown. In the capital alſo were a temple to Jupiter the Guardian, and another to Juno, with the mint; and on the deſcent of the hill was the temple of Concord. This beautiful edifice contained the moſt ſacred depoſites of religion, ſuch as the ancilia, the books of the Sibyls, &c.

The capitol was burnt under Vitellius, and rebuilt under Veſpaſian. It was burnt a ſecond time by lightning under Titus, and reſtored by Domitian.

Anciently the name *capitol* was likewiſe applied to all the principal temples in moſt of the colonies throughout the Roman empire; as at Conſtantinople, Jeruſalem, Carthage, Ravenna, Capua, &c.—That of Thouloufe has given the name of *capitouls* to the echevins or ſheriffs.

CAPITOLINE GAMES, annual games inſtituted by Camillus, in honour of Jupiter Capitolinus, and in commemoration of the capitol's not being taken by the Gauls. Plutarch tells us that a part of the ceremony conſiſted in the public criers putting up the Hetrurians to ſale by auction: they alſo took an old man, and tying a golden bulla about his neck, expoſed him to the public deriſion. Feſtus ſays they alſo dreſſed him in a pretexta.—There was another kind of Capitoline games, inſtituted by Domitian, wherein there were rewards and crowns beſtowed on the poets, champions, orators, hiſtorians, and muſicians. Theſe laſt Capitoline games were celebrated every five years, and became ſo famous, that inſtead of calculating time by luſtra, they began to count by Capitoline games, as the Greeks did by Olympiads. It appears, however, that this cuſtom was not of long continuance.

CAPITOLINUS, JULIUS, an hiſtorian in the beginning of the fourth age under Diocleſian, to whom he inſcribed the Lives of Verus, Antoninus Pius, Clodius Balbinus, Macrinus, the Maximins, and the Gordians. He wrote other lives, which are moſt of them loſt.

CAPITOUL, or CAPITOL, an appellation given to the chief magiſtrates of Thouloufe, who have the adminiſtration of juſtice and policy both civil and mercantile in the city. The capitouls at Thouloufe are much the ſame with the echevins at Paris, and with the conſuls, bailiffs, burgomaſters, mayors, and aldermen, &c. in other cities. In ancient acts they are called *conſules*, *capitularii*, or *capitolini*, and their body *capitulum*. From this laſt come the words *capitularii* and *capitouls*. The appellative *capitolini* aroſe hence, that they have the charge and cuſtody of the townhouſe, which was anciently called *capitol*.

Capitulate ‖ Capitulation.

The office laſts only one year, and ennobles the bearers. In ſome ancient acts they are called *capitulum nobilium Toloſæ*. Thoſe who have borne it ſtyle themſelves afterwards burgeſſes. They are called to all general councils, and have the *jus imaginum*; that is, when the year of their adminiſtration is expired, their pictures are drawn in the townhouſe; a cuſtom which they have retained from the ancient Romans, as may be ſeen in Sigonius.

CAPITULATE, an appellation given to the ſeveral quarters or diſtricts of the city of Thouloufe, each under the direction of a capitoul: much like the wards of London, under their aldermen. Thouloufe is now divided into eight *capitoulates* or quarters, which are ſubdivided into *moulans*, each of which has its tithingman, whoſe buſineſs is to inform the capitoul of what paſſes in his tithing, and to inform the inhabitants of the tithing of the orders of the capitoul.

CAPITULAR, or CAPITULARE, denotes an act paſſed in a chapter, either of knights, canons, or religious.

The capitularia or capitulars of Charlemagne, Charles the Bald, &c. are the laws, both eccleſiaſtical and civil, made by thoſe emperors in the general councils or aſſemblies of the people; which was the way in which the conſtitutions of moſt of the ancient princes were made; each perſon preſent, though a plebeian, ſetting his hand to them.

Some diſtinguiſh theſe from laws; and ſay, they were only ſupplements to laws. They had their name, *capitulars*, becauſe divided into capitula, chapters, or ſections. In theſe capitulars did the whole French juriſprudence anciently conſiſt. In proceſs of time, the name was changed for that of ordinances.

Some diſtinguiſh three kinds of capitulars, according to the difference of their ſubject matter: thoſe on eccleſiaſtical affairs are really canons, extracted from councils; thoſe on ſecular affairs, real laws; thoſe relating to particular perſons, or occaſions, private regulations.

CAPITULATION, in *Military* affairs, a treaty made between the inhabitants or garriſon of a place beſieged and the beſiegers, for the delivering up the place on certain conditions. The moſt honourable and ordinary terms of capitulation are, To march out at the breach with arms and baggage, drums beating, colours flying, a match lighted at both ends, and ſome pieces of cannon, waggons and convoys for their baggage, and for their ſick and wounded.

CAPITULATION in the German polity, a contract which the emperor makes with the electors, in the name of all the princes and ſtates in the empire, before he is declared emperor, and which he ratifies before he is raiſed to that ſovereign dignity. The principal points which the emperor undertakes to obſerve are, 1. To defend the church and empire. 2. To obſerve the fundamental laws of the empire. And, 3. To maintain and preſerve the rights, privileges, and immunities of the electors, princes, and other ſtates of the empire, ſpecified in the capitulation. Theſe articles and capitulations are preſented to the emperor by the electors only, without the concurrence of the other

ſtates,

Capitulum || Caponiere.

ſtates, who have complained from time to time of ſuch proceedings; and in the time of the Weſtphalian treaty, in 1648, it was propoſed to deliberate in the following diet, upon a way of making a perpetual capitulation; but the electors have always found means of eluding the execution of this article. In order, however, to give ſome ſatisfaction to their adverſaries, they have inſerted in the capitulations of the emperors, and in that of Francis I. in particular, a promiſe to uſe all their influence to bring the affair of a perpetual capitulation to a concluſion. Some German authors own, that this capitulation limits the emperor's power; but maintain that it does not weaken his ſovereignty: though the moſt part maintain that he is not abſolute, becauſe he receives the empire under conditions, which ſet bound to an abſolute authority.

CAPITULUM, in the ancient military art, was a tranſverſe beam, wherein were holes through which paſſed the ſtrings whereby the arms of huge engines, as baliſtæ, catapultæ, and ſcorpions, were played or worked.

CAPITULUM, in eccleſiaſtical writers, denoted part of a chapter of the Bible read and explained. In which ſenſe they ſaid, *ire ad capitulum*, "to go to ſuch a lecture." Afterwards the place or apartment where ſuch theological exerciſes were performed was denominated *domus capituli*.

CAPNICON, in *Antiquity*, chimney money, or a tax which the Roman emperors levied for ſmoke, and which of conſequence was due from all, even the pooreſt, who kept a fire. This was firſt invented by Nicephorus.

CAPNOMANCY, a kind of divination by means of ſmoke, uſed by the ancients in their ſacrifices. The words come from *καπνος ſmoke*, and *μαντεια divination*. The general rule was, when the ſmoke was thin and light, and roſe ſtraight up, it was a good omen; if the contrary, it was an ill one. There was alſo another ſpecies of capnomancy, conſiſting in the obſervation of the ſmoke riſing from poppy and jaſmine ſeed caſt upon lighted coals.

CAPO FINO, a large barren rock in the territory of the Genoeſe, which has a caſtle on its eaſtern peak. Near it is a ſmall harbour of the ſame name, 13 miles eaſt by ſouth of Genoa.

Capo d'Iſtria, a conſiderable town of Italy, in Iſtria, on the gulf of Trieſte, with a biſhop's ſee, and ſubject to the Venetians. The air is wholeſome and temperate; its principal revenue conſiſts in wine and ſalt. E. Long. 14. 0. N. Lat. 45. 48.

CAPON, a cock chicken, gelded as ſoon as left by the dam, or as ſoon as he begins to crow. They are of uſe either to lead chickens, ducklings, pheaſants, &c. and defend them from the kits and buzzards; or to feed for the table, they being reckoned more delicate than either a cock or a hen.

CAPONIERE, or CAPPONIERE, in fortification, a covered lodgement ſunk four or five feet into the ground encompaſſed with a little parapet about two feet high, ſerving to ſupport ſeveral planks covered with earth. The caponiere is large enough to contain 15 or 20 ſoldiers; and is uſually placed in the glacis on the extremity of the counterſcarp, and in dry moats; having little embraſures for the ſoldiers to fire through.

Cappadocia.

CAPPADOCIA, an ancient kingdom of Aſia, comprehending all that country which lies between Mount Taurus and the Euxine ſea. It was divided by the Perſians into two ſatrapies or governments; by the Macedonians into two kingdoms, the one called *Cappadocia ad Taurum*; the other *Cappadocia ad Pontum*, and commonly *Pontus*; for the hiſtory, &c. of which laſt, ſee the article PONTUS.

CAPPADOCIA Magna, or *Cappadocia* properly ſo called, lies between the 38th and 41ſt degrees of north latitude. It was bounded by Pontus on the north, Lycaonia and part of Armenia Major on the ſouth, Galatia on the weſt, and by the Euphrates and part of Armenia Minor on the eaſt. The firſt king of Cappadocia we read of in hiſtory was Pharnaces, who was preferred to the crown by Cyrus king of Perſia, who gave him his ſiſter Atoſſa in marriage. This is all we find recorded of him, except that he was killed in a war with the Hyrcanians. After him came a ſucceſſion of eight kings, of whom we know ſcarce any thing but that they continued faithful to the Perſian intereſt. In the time of Alexander the Great, Cappadocia was governed by Ariarathes II. who, notwithſtanding the vaſt conqueſts and fame of the Macedonian monarch, continued unſhaken in his fidelity to the Perſians. Alexander was prevented by death from invading his dominions; but Perdiccas marching againſt him with a powerful and well diſciplined army, diſperſed his forces, and having taken Ariarathes himſelf priſoner, crucified him with all thoſe of the royal blood whom he could get into his power. Diodorus tells us that he was killed in the battle. He is ſaid to have reigned 82 years. His ſon Ariarathes III. having eſcaped the general ſlaughter of the royal family, fled into Armenia, where he lay concealed till the civil diſſenſions which aroſe among the Macedonians gave him a fair opportunity of recovering his paternal kingdom. Amyntas, at that time the governor of Cappadocia, oppoſed him: but being defeated in a pitched a battle, the Macedonians were obliged to abandon all the ſtrong holds. Ariarathes, after a long and peaceable reign, left his kingdom to his ſon Ariaramnes II. He applied himſelf more to the arts of peace than war, in conſequence of which Cappadocia flouriſhed greatly during his reign. He was ſucceeded by his ſon Ariarathes IV. who proved a very warlike prince, and having overcome Arſaces, founder of the Parthian monarchy, conſiderably enlarged his own dominions.

He was ſucceeded by Ariarathes V. who marrying the daughter of Antiochus the Great, entered into an alliance with that prince againſt the Romans; but Antiochus being defeated, the king of Cappadocia was obliged to ſue for peace, which he obtained, after having paid 200 talents by way of fine, for taking up arms againſt the people of Rome. He afterwards aſſiſted the republic with men and money againſt Perſeus king of Macedon, on which account he was by the ſenate honoured with the title of *the friend and ally of the Roman people*. He left the kingdom in a very flouriſhing condition to his ſon Mithridates, who on his acceſſion took the name of Ariarathes VI.

This prince, (ſurnamed *Philopater*, from the filial reſpect and love he ſhowed his father from his very infancy) immediately renewed the alliance with Rome. Out of mere good nature, he reſtored Mithrobuzanes

ſon

Cappadocia.

ſon to Ladriades, king of the Leſſer Armenia, to his father's kingdom, though he foreſaw that the Armenians would lay hold of that opportunity to join Artaxias, who was then on the point of invading Cappadocia. Theſe differences, however, were ſettled before they came to an open rupture by the Roman legates; and Ariarathes ſeeing himſelf thus delivered from an impending war by the mediation of the republic, preſented the ſenate with a golden crown; and offered his ſervice wherever they thought proper to employ him. The ſenate in return ſent him a ſtaff, and chair of ivory; which were preſents uſually beſtowed on thoſe only whom they looked upon as attached to their intereſt. Not long before this, Demetrius Soter king of Syria had offered Ariarathes his ſiſter in marriage, the widow of Perſeus king of Macedon: but this offer the king of Cappadocia was obliged to decline for fear of offending the Romans; and his ſo doing was in the higheſt degree acceptable to the republic, who reckoned him among the chief of her allies. Demetrius, however, being greatly incenſed at the ſlight put upon his ſiſter, ſet up a pretender to the throne, one Orophernes, a ſuppoſititious, or, as others call him, a natural ſon of the deceaſed king. The Romans ordered Eumenes king of Pergamus to aſſiſt Ariarathes with all his forces: which he did, but to no purpoſe; for the confederates were overthrown by Demetrius, and Ariarathes was obliged to abandon the kingdom to his rival. This happened about 159 years before Chriſt, and the uſurper immediately deſpatched ambaſſadors to Rome with a golden crown. The ſenate declined accepting the preſent, till they heard his pretenſions to the kingdom; and this Orophernes, by ſuborned witneſſes, made appear ſo plain, that the ſenate decreed that Ariarathes and he ſhould reign as partners; but next year Orophernes was driven out by Attalus brother to Eumenes, and his ſucceſſor to the kingdom of Pergamus.

Ariarathes, being thus reſtored, immediately demanded of the Priennians 400 talents of gold which Orophernes had depoſited with them. They honeſtly replied, that as they had been truſted with the money by Orophernes, they could deliver it to none but himſelf, or ſuch as came in his name. Upon this, the king entered their territories with an army, deſtroying all with fire and ſword. The Priennians, however, ſtill perſevered in their integrity; and though their city was beſieged by the united forces of Ariarathes and Attalus, not only made an obſtinate defence, but found means to reſtore the ſum to Orophernes. At laſt they applied to the Romans for aſſiſtance, who enjoined the two kings to raiſe the ſiege, under pain of being declared enemies to the republic. Ariarathes immediately obeyed; and marching his army into Aſſyria, joined Alexander Epiphanes againſt Demetrius Soter, by whom he had been formerly driven out of his kingdom. In the very firſt engagement Demetrius was ſlain, and his army entirely diſperſed, Ariarathes having on that occaſion given uncommon proofs of his courage and conduct. Some years after, a war breaking out between the Romans and Ariſtonicus who claimed the kingdom of Pergamus in right of his father, Ariarathes joined the former, and was ſlain in the ſame battle in which P. Craſſus proconſul of Aſia was taken, and the Roman army cut in pieces. He left ſix ſons by his wife Laodice, on whom the Romans beſtowed Lycaonia and Cilicia. But Laodice, fearing leſt her children, when they came to age, ſhould take the government out of her hands, poiſoned five of them, the youngeſt only having eſcaped her cruelty by being conveyed out of the kingdom. The queen herſelf was ſoon after put to death by her ſubjects, who could not bear her cruel and tyrannical government. Cappadocia.

Laodice was ſucceeded by Ariarathes VII. who, ſoon after his acceſſion, married another Laodice, daughter of Mithridates the Great, hoping to find in that prince a powerful friend to ſupport him againſt Nicomedes king of Bithynia who laid claim to part of Cappadocia. But Mithridates inſtead of aſſiſting, procured one Gordius to poiſon his unhappy ſon-in-law, and, on his death, ſeized the kingdom, under pretence of maintaining the rights of the Cappadocians againſt Nicomedes, till the children of Ariarathes were in a condition to govern the kingdom. The Cappadocians at firſt fancied themſelves obliged to their new protector: but, finding him unwilling to reſign the kingdom to the lawful heir, they roſe up in arms, and driving out all the garriſons placed by Mithridates, placed on the throne Ariarathes VIII. eldeſt ſon of their deceaſed king.

The new prince found himſelf immediately engaged in a war with Nicomedes; but, being aſſiſted by Mithridates, not only drove him out of Cappadocia, but ſtripped him of a great part of his hereditary dominions. On the concluſion of the peace, Mithridates, ſeeking for ſome pretence to quarrel with Ariarathes, inſiſted upon his recalling Gordius, who had murdered his father; which being rejected with abhorrence, a war enſued. Mithridates took the field firſt, in hopes of overrunning Cappadocia before Ariarathes could be in a condition to make head againſt him; but, contrary to his expectation, he was met on the frontiers by the king of Cappadocia with an army no way inferior to his own. Hereupon he invited Ariarathes to a conference; and, in ſight of both armies, ſtabbed him with a dagger, which he had concealed under his garment. This ſtruck ſuch terror into the Cappadocians, that they immediately diſperſed, and gave Mithridates an opportunity of poſſeſſing himſelf of the kingdom without the leaſt oppoſition. The Cappadocians, however, not able to endure the tyranny of his prefects, ſoon ſhook off the yoke; and recalling the king's brother, who had fled into the province of Aſia, proclaimed him king. He was ſcarce ſeated on the throne, however, before Mithridates invaded the kingdom at the head of a very numerous army, and having drawn Ariarathes to a battle, defeated his army with great ſlaughter, and obliged him to abandon the kingdom. The unhappy prince ſoon after died of grief; and Mithridates beſtowed the kingdom on his ſon, who was then but eight years old, giving him alſo the name of *Ariarathes*. But Nicomedes Philopater king of Bithynia, fearing leſt Mithridates, having now got poſſeſſion of the whole kingdom of Cappadocia, ſhould invade his territories, ſuborned a youth to paſs himſelf for the third ſon of Ariarathes, and to preſent to them a petition in order to be reſtored to his father's kingdom. With him he ſent to Rome Laodice, ſiſter of Mithridates, whom he had married after the death of her former huſband Ariarathes. Laodice declared before the Cappadocia.

Cappadocia.

ſenate, that ſhe had three ſons by Ariarathes, and that the petitioner was one of them; but that ſhe had been obliged to keep him concealed, leſt he ſhould undergo the ſame fate with his brothers. The ſenate aſſured him that they would at all events reinſtate him in his kingdom. But, in the mean time, Mithridates having notice of theſe tranſactions, deſpatched Gordius to Rome, to undeceive the ſenate, and to perſuade them that the youth to whom he had reſigned the kingdom of Cappadocia was the lawful ſon of the late king, and grandſon to Ariarathes who had loſt his life in the ſervice of the Romans againſt Ariſtonicus. This unexpected embaſſy put the ſenate upon inquiring more narrowly into the matter, whereby the whole plot was diſcovered; upon which Mithridates was ordered to reſign Cappadocia, and the kingdom was declared free. The Cappadocians, however, in a ſhort time ſent ambaſſadors to Rome, acquainting the ſenate that they could not live without a king. This greatly ſurpriſed the Romans, who had ſuch an averſion to royal authority; but they gave them leave to elect a king of their own nation. As the family of Pharnaces was now extinct, the Cappadocians choſe Ariobarzanes; and their choice was approved by the ſenate, he having on all occaſions ſhown himſelf a ſteady friend to the Romans.

Ariobarzanes had ſcarce taken poſſeſſion of his kingdom when he was driven out by Tigranes king of Armenia: who reſigned Cappadocia to the ſon of Mithridates, in purſuance of an alliance previouſly concluded between the two parties. Ariobarzanes fled to Rome; and, having engaged the ſenate in his cauſe, he returned into Aſia with Sylla, who was enjoined to reſtore him to his kingdom. This was eaſily performed by Sylla, who, with a ſmall body of troops, routed Gordius who came to meet him on the borders of Cappadocia at the head of a numerous army. Sylla, however, had ſcarce turned his back, when Ariobarzanes was again driven out by Ariarathes the ſon of Mithridates, on whom Tigranes had beſtowed the kingdom of Cappadocia. This obliged Sylla to return into Aſia, where he was attended with his uſual ſucceſs, and Ariobarzanes was again placed on the throne. After the death of Sylla, he was the third time forced by Mithridates to abandon his kingdom; but Pompey, having entirely defeated Mithridates near Mount Stella, reſtored Ariobarzanes to his throne, and rewarded him for his ſervices during the war, with the provinces of Sophene, Gordiene, and great part of Cilicia. The king, however, being now advanced in years, and deſirous of ſpending the remainder of his life in eaſe, reſigned the crown to his ſon Ariobarzanes, in preſence of Pompey; and never afterwards troubled himſelf with affairs of ſtate.

Ariobarzanes II. proved no leſs faithful to the Romans than his father had been. On the breaking out of the civil war between Cæſar and Pompey, he ſided with the latter; but after the death of Pompey, he was received into favour by Cæſar, who even beſtowed upon him great part of Armenia. While Cæſar was engaged in a war with the Egyptians, Pharnaces king of Pontus invaded Cappadocia, and ſtripped Ariobarzanes of all his dominions; but Cæſar, having defeated Pharnaces, reſtored the king of Cappadocia, and honoured him with new titles of friendſhip. After the murder of Cæſar, Ariobarzanes, having refuſed to join Brutus and Caſſius, was by them declared an enemy to the republic, and ſoon after taken priſoner and put to death. He was ſucceeded by his brother Ariobarzanes III. who was by Mark Antony deprived both of his kingdom and life; and in him ended the family of Ariobarzanes. Cappadocia.

Archelaus, the grandſon of that general of the ſame name who commanded againſt Sylla in the Mithridatic war, was by Mark Antony placed on the throne of Cappadocia, though nowiſe related either to the family of Pharnaces or Ariobarzanes. His preferment was entirely owing to his mother Glaphyra, a woman of great beauty, but of a looſe behaviour, who, in return for her compliance with the deſires of Antony, obtained the kingdom of Cappadocia for her ſon. In the war between Auguſtus and Antony, he joined the latter; but at the interceſſion of the Cappadocians, was pardoned by the emperor. He afterwards received from him Armenia the leſſer, and Cilicia Trachæa, for having aſſiſted the Romans in clearing the ſeas of pirates who greatly infeſted the coaſts of Aſia. He contracted a ſtrict friendſhip with Herod the Great, king of Judea; and even married his daughter Glaphyra to Alexander, Herod's ſon. In the reign of Tiberius, Archelaus was ſummoned to appear before the ſenate; for he had always been hated by that emperor, becauſe in his retirement at Rhodes he had paid him no ſort of reſpect. This had proceeded from no averſion in him to Tiberius, but from the warning given by Archelaus to his friends at Rome. For Caius Cæſar, the preſumptive heir to the empire, was then alive, and had been ſent to compoſe the differences of the eaſt; whence the friendſhip of Tiberius was then looked upon as dangerous. But when he came to the empire, Tiberius, remembering the diſreſpect ſhown him by Archelaus, enticed the latter to Rome by means of letters from Livia, who promiſed him her ſon Tiberius's pardon, provided he came in perſon to implore it. Archelaus obeyed the ſummons, and haſtened to Rome; where he was received by the emperor with great wrath and contempt, and ſoon after accuſed as a criminal in the ſenate. The crimes of which he was accuſed were mere fictions; but his concern at ſeeing himſelf treated as a malefactor was ſo great, that he died ſoon after of grief, or, as others ſay, laid violent hands on himſelf. He is ſaid to have reigned 50 years.

On the death of Archelaus, the kingdom of Cappadocia was reduced to a Roman province, and governed by thoſe of the equeſtrian order. It continued ſubject to the Romans till the invaſion of the eaſtern empire by the Turks, to whom it is now ſubject, but has no diſtinguiſhing modern name. In what was anciently called *Cappadocia*, however, the Turks have four beglerbeglics, called *Siwas*, *Trebizond*, *Maraſch*, and *Cogni*.

In the time of the Romans, the inhabitants of Cappadocia bore ſo bad a character, and were reputed ſo vitious and lewd, that, among the neighbouring nations, a wicked man was emphatically called a *Cappadocian*. In after ages, however, their lewd diſpoſition was ſo corrected and reſtrained by the pure doctrines of

Cappadocia || Capra Saltans.

of Chriſtianity, that no country whatever has produced greater champions of the Chriſtian religion, or given to the church prelates of more unblemiſhed characters.

We have now no ſyſtem of the Cappadocian laws, and ſcarce wherewithal to form any particular idea of them. As to their commerce, they carried on a conſiderable trade in horſes, great numbers of which were produced in their country; and we read of them in Scripture as frequenting the fairs of Tyre with this commodity. As Cappadocia abounded with mines of ſilver, braſs, iron, and alum, and afforded great ſtore of alabaſter, cryſtal, and jaſper, it is probable that they might ſupply the neighbouring countries with theſe commodities.

The religion of the ancient Cappadocians was much the ſame with that of the Perſians. At Comana there was a rich and ſtately temple dedicated to Bellona; whoſe battles the prieſts and their attendants uſed to repreſent on ſtated days, cutting and wounding each other as if ſeized with an enthuſiaſtic fury. No leſs famous and magnificent were the temples of Apollo Catanius, and of Jupiter: the laſt of which had 3000 ſacred ſervants, or religious votaries. The chief prieſt was next in rank to that of Comana; and, according to Strabo, had a yearly revenue of 15 talents. Diana Perſica was worſhipped in a city called *Caſtaballa*, where women, devoted to the worſhip of that goddeſs, were reported to tread barefooted on burning coals, without receiving any hurt. The temples of Diana at Dioſpolis, and of Anias at Zela, were likewiſe held in great veneration both by the Cappadocians and Armenians, who flocked to them from all parts. In the latter were tendered all oaths in matters of conſequence; and the chief among the prieſts was no way inferior in dignity, power, and wealth, to any in the kingdom; having a royal attendance, and an unlimited authority over all the inferior ſervants and officers of the temple. The Romans, who willingly adopted all the ſuperſtitions and ſuperſtitious rites of the nations they conquered, greatly increaſed the revenues of this and other temples; conferring the prieſthood on ſuch as they thought moſt fit for carrying on their deſigns.—We are told that human ſacrifices were offered at Comana; and that this barbarous cuſtom was brought by Oreſtes and his ſiſter Iphigenia from Taurica Scythica, where men and women were immolated to Diana. But this cuſtom, if ever it obtained in Cappadocia, was aboliſhed in the times of the Romans.

CAPPANUS, a name given by ſome authors to a worm that adheres to and gnaws the bottoms of ſhips; to which it is extremely pernicious, eſpecially in the Eaſt and Weſt Indies; to prevent this, ſeveral ſhips have lately been ſheathed with copper; the firſt trial of which was made on his majeſty's frigate the Alarm.

CAPPARIS. See Botany *Index*.

The buds of this plant pickled with vinegar, &c. are brought to Britain annually from Italy and the Mediterranean. They are ſuppoſed to excite appetite and aſſiſt digeſtion; and to be particularly uſeful as detergents and aperients in obſtructions of the liver and ſpleen.

CAPRA, or Goat. See Mammalia *Index*.

Capra Saltans, in *Meteorology*, a fiery meteor or exhalation ſometimes ſeen in the atmoſphere. It forms an inflected line, reſembling in ſome meaſure the caperings of a goat; whence it has its name.

Caprala || Capricorn.

CAPRALA, an iſle of Italy, in the Tuſcan ſea, to the north-eaſt of Corſica, on which it depends. It is pretty populous, and has a ſtrong caſtle for its defence. It is about 15 miles in circumference. E. Long. 11. 5. N. Lat. 43. 15.

CAPRARIA. See Botany *Index*.

CAPRAROLA, one of the moſt magnificent palaces in Italy, ſeated on a hill, in Ronciglione, whoſe foot is watered by the river Tircia. It was built by Cardinal Farneſe; and has five fronts, in the middle of which is a round court, though all the rooms are ſquare, and well proportioned. It is 27 miles north-weſt of Rome.

CAPREÆ. See Capri.

CAPREOLUS, Elias, an excellent civilian, and learned hiſtorian, born at Breſcia in Italy, wrote a hiſtory of Breſcia, and other works: died in 1519.

CAPRI, (anciently *Capreæ*), a city and iſland at the entrance of the gulf of Naples, E. Long. 14. 50. N. Lat. 40. 45.—The iſland is only four miles long and one broad; the city is a biſhop's ſee, and ſituated on a high rock at the weſt end of the iſland. Capreæ was anciently famous for the retreat of the emperor Tiberius for ſeven years, during which he indulged himſelf in the moſt ſcandalous debaucheries*. Before Tiberius came hither, Capri had attracted the notice of Auguſtus, as a moſt eligible retreat, though in ſight of populous cities, and almoſt in the centre of the empire. His ſucceſſor preferred it to every other reſidence; and in order to vary his pleaſures, and enjoy the advantages as well as avoid the inconveniences of each revolving ſeaſon, built 12 villas in different ſituations, dedicated to the 12 greater gods: the ruins of ſome of them are ſtill to be ſeen: at Santa Maria are extenſive vaults and reſervoirs; and on an adjoining brow are the remains of a lighthouſe; two broken columns indicate the entrance of the principal court. According to Dion Caſſius, this iſland was wild and barren before the Cæſars took it under their immediate protection: at this day a large portion of its ſurface is uncultivated and impracticable; but every ſpot that will admit the hoe is induſtriouſly tilled, and richly laden with the choiceſt productions of agriculture. The odium attached to the memory of Tiberius proved fatal to his favourite abode; ſcarce was his death proclaimed at Rome, when the ſenate iſſued orders for the demolition of every fabric he had raiſed on the iſland, which by way of puniſhment was thenceforward deſtined to be a ſtate priſon. The wife and ſiſter of Commodus were baniſhed to its inhoſpitable rocks, which were ſoon ſtained with their blood. In the middle ages Capri became an appendage of the Amalfitan republic, and after the downfal of that ſtate, belonged to the duchy of Naples. There ſtood a pharos on this iſland, which, a few days before the death of Tiberius, was overthrown by an earthquake.

* See *Tiberius*.

CAPRIATA, Peter John, a civilian and hiſtorian, was born at Genoa. He wrote, in Italian, the hiſtory of the wars of Italy; an Engliſh tranſlation of which was printed in London in 1663.

CAPRICORN, in *Aſtronomy*, one of the 12 ſigns of the zodiac. See Astronomy *Index*.

Capricorn, Caprification.

The ancients accounted Capricorn the tenth ſign; and when the ſun arrived thereat, it made the winter ſolſtice with regard to our hemiſphere: but the ſtars having advanced a whole ſign towards the eaſt, Capricorn is now rather the 11th ſign; and it is at the ſun's entry into Sagittary that the ſolſtice happens, though the ancient manner of ſpeaking is ſtill retained.

This ſign is repreſented on ancient monuments, medals, &c. as having the forepart of a goat and the hindpart of a fiſh, which is the form of an Ægipan; ſometimes ſimply under the form of goat.

Tropic of CAPRICORN, a leſſer circle of the ſphere, which is parallel to the equinoctial, and at 23° 30′ diſtance from it ſouthwards; paſſing through the beginning of Capricorn.

CAPRIFICATION, a method uſed in the Levant, for ripening the fruit of the domeſtic fig tree, by means of inſects bred in that of the wild fig tree.

The moſt ample and ſatisfactory accounts of this curious operation in gardening are thoſe of Tournefort and Pontedera: the former, in his Voyage to the Levant, and in a Memoir delivered to the Academy of Sciences at Paris in 1705; the latter, in his *Anthologia*. The ſubſtance of Tournefort's account follows: "Of the thirty ſpecies or varieties of the domeſtic fig tree which are cultivated in France, Spain, and Italy, there are but two cultivated in the Archipelago. The firſt ſpecies is called *ornos*, from the old Greek *erinos*, which anſwers to *caprificus* in Latin, and ſignifies a wild fig-tree. The ſecond is the domeſtic or garden fig-tree. The former bears ſucceſſively, in the ſame year, three ſorts of fruit, called *fornites*, *cratitires*, and *orni*; which, though not good to eat, are found abſolutely neceſſary towards ripening thoſe of the garden fig. Theſe fruits have a ſleek even ſkin; are of a deep green colour; and contain in their dry and mealy inſide ſeveral male and female flowers placed upon diſtinct footſtalks, the former above the latter. The *fornites* appear in Auguſt, and continue to November without ripening: in theſe are bred ſmall worms, which turn to a ſort of gnats nowhere to be ſeen but about theſe trees. In October and November, theſe gnats of themſelves make a puncture into the ſecond fruit, which is called *cratitires*. Theſe do not ſhow themſelves till towards the end of September. The *fornites* gradually fall away after the gnats are gone; the *cratitires*, on the contrary, remain on the tree till May, and encloſe the eggs depoſited by the gnats when they pricked them. In May, the third ſort of fruit, called *orni*, begins to be produced by the wild fig-trees. This is much bigger than the other two; and when it grows to a certain ſize, and its bud begins to open, it is pricked in that part by the gnats of the *cratitires*, which are ſtrong enough to go from one fruit to another to depoſite their eggs. It ſometimes happens that the gnats of the *cratitires* are ſlow to come forth in certain parts, while the *orni* in thoſe very parts are diſpoſed to receive them. In this caſe, the huſbandman is obliged to look for the *cratitires* in another part, and fix them at the ends of the branches of thoſe fig-trees whoſe *orni* are in a fit diſpoſition to be pricked by the gnats. If they miſs the opportunity, the *orni* fall, and the gnats of the *cratitires* fly away. None but thoſe that are well acquainted with the culture know the critical moment of doing this; and in order to know it, their eye is perpetually fixed on the bud of the fig; for that part not only indicates the time that the prickers are to iſſue forth, but alſo when the fig is to be ſucceſsfully pricked: if the bud is too hard and compact, the gnat cannot lay its eggs; and the fig drops when the bud is too open. Caprification.

"The uſe of all theſe three ſorts of fruit is to ripen the fruit of the garden fig-tree, in the following manner: During the months of June and July, the peaſants take the *orni*, at the time their gnats are ready to break out, and carry them to the garden fig-trees: if they do not nick the moment, the *orni* fall; and the fruit of the domeſtic fig-tree, not ripening, will in a very little time fall in like manner. The peaſants are ſo well acquainted with theſe precious moments, that, every morning, in making their inſpection, they only transfer to their garden fig-trees ſuch *orni* as are well conditioned, otherwiſe they loſe their crop. In this caſe, however, they have one remedy, though an indifferent one; which is, to ſtrew over the garden fig-trees another plant in whoſe fruit there is alſo a ſpecies of gnats which anſwer the purpoſe in ſome meaſure."

The caprification of the ancient Greeks and Romans, deſcribed by Theophraſtus, Plutarch, Pliny, and other authors of antiquity, correſponds in every circumſtance with what is practiſed at this day in the Archipelago and in Italy. Theſe all agree in declaring, that the wild fig-tree, *caprificus*, never ripened its fruit; but was abſolutely neceſſary for ripening that of the garden or domeſtic fig, over which the huſbandmen ſuſpended its branches. The reaſon of this ſucceſs has been ſuppoſed to be, that by the punctures of theſe inſects the veſſels of the fruit are lacerated, and thereby a greater quantity of nutritious juice derived thither. Perhaps, too, in depoſiting their eggs, the gnats leave behind them ſome ſort of liquor proper to ferment gently with the milk of the figs, and to make their fleſh tender. The figs in Provence, and even at Paris, ripen much ſooner for having their buds pricked with a ſtraw dipped in olive-oil. Plums and pears likewiſe, pricked by ſome inſects, ripen much the faſter for it; and the fleſh round ſuch puncture is better taſted than the reſt. It is not to be diſputed, that conſiderable changes happen to the contexture of fruits ſo pricked, juſt the ſame as to parts of animals pierced with any ſharp inſtrument. Others have ſuppoſed that theſe inſects penetrated the fruit of the tree to which they were brought, and gave a more free admiſſion to the air, and to the ſun. Linnæus explained the operation, by ſuppoſing that the inſects brought the farina from the wild fig, which contained male flowers only, to the domeſtic fig, which contained the female ones. Haſſelquiſt, from what he ſaw in Paleſtine, ſeemed to doubt of this mode of fructification. M. Bernard, in the Memoirs of the Society of Agriculture, oppoſes it more decidedly. He could never find the inſect in the cultivated fig; and, in reality, it appeared to leave the wild fig, after the ſtamina were mature, and their pollen diſſipated: beſides, he adds, what they may have brought on their wings muſt be rubbed away, in the little aperture which they would form for themſelves. At Malta, where there are ſeven or eight varieties of the domeſtic fig, this operation is only performed on thoſe which ripen lateſt: the former are of a proper ſize, fine flavour, and in great abundance without it; ſo that he thinks the caprification only haſtens the ripening.

Caprimulgus || Capſa.

ripening. He examined the parts of fructification of the fig; and he obſerves, if this examination be made previous to the ripening, that round the eye of the fig, and in the ſubſtance of its covering, may be ſeen triangular dentated leaves, preſſed one againſt another; and under theſe leaves are the ſtamina, whoſe pollen is deſtined for the impregnation of the grains, which fill the reſt of the fruit. Theſe male organs are much more numerous in the wild fig than in the domeſtic; and the ſtamina are found to contain a yellow duſt, which may be collected when it is ripe. The wild figs, when ripe, are not ſucculent, and have no taſte, though the grains are diſpoſed in the ſame manner as in the other kind. The pith of the grain of the wild fruit ſerves as food to a ſpecies of the cynips, whoſe larva is white, till the moment of its transformation; and it is by an opening, in the direction of the piſtil, that the inſect penetrates the grain. From this account it is thought probable that the inſect is only communicated by accident to the domeſtic fig, and that the flowers of this genus are ſometimes hermaphrodites. But the number of hermaphrodite flowers being fewer on the cultivated than on the wild fig, the ſeeds are fecundated more certainly and quickly by the caprification; and every botaniſt knows, that when the impregnation is completed, the flower ſoon withers; while, if by any accident it is delayed, it continues in bloom much longer. This view of the ſubject, therefore, explains very completely the reaſon why, in Malta, the caprification is practiſed on the late kind of figs, becauſe it haſtens the formation and maturity of the fruit.

CAPRIMULGUS, Goatsucker, or *Fern owl.* See Ornithology *Index.*

CAPRIOLES, in the *Manege*, leaps that a horſe makes in the ſame place without advancing, in ſuch a manner, that, when he is at the height of the leap, he jerks out with his hinder legs even and near. It is the moſt difficult of all the high manege. It differs from a croupade, in this, that, in a croupade, a horſe does not ſhow his ſhoes; and from a ballotade, becauſe in this he does not jerk out. To make a horſe work well at caprioles, he muſt be put between two pillars, and taught to raiſe firſt his fore quarters, and then his hind quarters while his fore ones are yet in the air; for which end you muſt give him the whip and the poinſon.

CAPSA, in *Ancient Geography*, a large and ſtrong town of Numidia, ſituated amidſt vaſt deſerts, waſte, uncultivated, and full of ſerpents, where Jugurtha kept his treaſure. In his time it was taken and razed by Marius the Roman general, who put to death all the citizens capable of bearing arms, and ſold the reſt for ſlaves. It was, however, afterwards rebuilt by the Romans, and ſtrongly fortified; but, on the decline of their empire, was taken and demoliſhed a ſecond time, by Occuba a famous Arab general. The walls of the citadel are ſtill remaining, and are monuments of the ancient glory and ſtrength of Capſa. They are 24 fathoms in height, and five in thickneſs, built of large ſquare ſtones, and have now acquired the ſolidity and firmneſs of a rock. The walls of the town were rebuilt by the inhabitants ſince their firſt demolition; but were afterwards deſtroyed by Jacob Almanzar, who ſent a governor and troops into the province. In Marmol's time Capſa was very populous, and abounded with ſtately moſques and other ſtructures of ſuperb and elegant workmanſhip: but at preſent it is occupied by a poor and indigent people, fleeced and oppreſſed by the Tuneſe government. In the very centre of the city ſtands an encloſed fountain, which both ſupplies the people with drink, and affords them an agreeable bath. The adjacent country is now cultivated, and produces ſeveral kinds of fruits; but the climate is unhealthy. The inhabitants are remarkable for their peeviſhneſs of temper. Both men and women dreſs handſomely except their feet, which they cover with coarſe ſhoes of bungling workmanſhip, and made of the rough ſkins of wild beaſts, equally inconvenient and unbecoming. E. Long. 9. 3. N. Lat. 33. 15.

Capſarius, Capſicum.

CAPSARIUS, (from *capſa*, ſatchel), in antiquity, a ſervant who attended the Roman youth to ſchool, carrying a ſatchel with their books in it, ſometimes alſo called librarius.

Capsarius was alſo an attendant at the baths to whom perſons committed the keeping of their clothes.

Capsarius (from *capſa*, "a cheſt,"), among the Roman bankers, was he who had the care of the money cheſt or coffer.

CAPSICUM, or Guinea-pepper. See Botany *Index.*

The bell-pepper produces fruit fit for pickling; for which purpoſe they muſt be gathered before they arrive at their full ſize, while their rind is tender. They muſt be ſlit down on one ſide to get out the ſeeds, after which they ſhould be ſoaked two or three days in ſalt and water; when they are taken out of this and drained, boiling vinegar muſt be poured on them in a ſufficient quantity to cover them, and cloſely ſtopped down for two months; then they ſhould be boiled in the vinegar to make them green; but they want no addition of any ſpice, and are the wholeſomeſt and beſt pickle in the world. Another ſpecies is uſed for making what is called *cayan-butter* or *pepper-pots*, by the inhabitants of America, and which they eſteem the beſt of all the ſpices. The following is a receipt for making of a pepper-pot: "Take of the ripe ſeeds of this ſort of capſicum, and dry them well in the ſun; then put them into an earthen or ſtone pot, mixing flour between every ſtratum of pods; and put them into an oven after the baking of bread, that they may be thoroughly dried: after which they muſt be well cleanſed from the flour; and if any of the ſtalks remain adhering to the pods, they ſhould be taken off, and the pods reduced to a fine powder; to every ounce of this add a pound of wheat flour, and as much leaven as is ſufficient for the quantity intended. After this has been properly mixed and wrought, it ſhould be made into ſmall cakes, and baked in the ſame manner as common cakes of the ſame ſize: then cut them into ſmall parts, and bake them again, that they may be as dry and hard as biſcuit; which being powdered and ſifted, is to be kept for uſe." This is prodigiouſly hot and acrimonious, ſetting the mouth as it were on fire. It is by ſome recommended as a medicine for flatulencies; but it is greatly to be doubted whether all thoſe hot irritating medicines are not productive of more harm than good, in this country at leaſt. If the ripe pods of capſicum are thrown into the fire, they will raiſe ſtrong and noiſome vapours, which occaſion vehement ſneezing,

Capſquares, Capſtan.

ing, coughing, and often vomiting, in thoſe who are near the place, or in the room where they are burnt. Some perſons have mixed the powder of the pods with ſnuff, to give to others for diverſion: but where it is in quantity, there may be danger in uſing it; for it will occaſion ſuch violent fits of ſneezing, as may break the blood veſſels of the head.

CAPSQUARES, ſtrong plates of iron which come over the trunnions of a gun, and keep it in the carriage. They are faſtened by a hinge to the prize-plate, that they may lift up and down, and form a part of an arch in the middle to receive a third part of the thickneſs of the trunnions: for two-thirds are let into the carriage, and the other end is faſtened by two iron wedges called the *fore-locks* and *keys*.

CAPSTAN, or CAPSTERN, a ſtrong maſſy column of timber, formed like a truncated cone, and having its upper extremity pierced with a number of holes to receive the bars or levers. It is let perpendicularly down through the decks of a ſhip; and is fixed in ſuch a manner, that the men, by turning it horizontally with their bars, may perform any work which requires an extraordinary effort.

Plate CXXXV.

A capſtern is compoſed of ſeveral parts, where A is the barrel, *b* the whelps, *c* the drumhead, and *d* the ſpindle. The whelps riſe out from the main body of the capſtern like buttreſſes, to enlarge the ſweep, ſo that a greater quantity of cable, or whatever rope encircles the barrel, may be wound about it at one turn, without adding much to the weight of the capſtern. The whelps reach downwards from the lower part of the drumhead to the deck. The drumhead is a broad cylindrical piece of wood reſembling a mill-ſtone, and fixed immediately above the barrel and whelps. On the outſide of this piece are cut a number of ſquare holes parallel to the deck to receive the bars. The ſpindle or pivot *d*, which is ſhod with iron, is the axis or foot upon which the capſtern reſts, and turns round in the ſaucer, which is a ſort of iron ſocket let into a wooden ſtock or ſtandard called the *ſtep*, reſting upon and bolted to the beams.

Beſides the different parts of the capſtern above explained, it is furniſhed with ſeveral appurtenances, as the *bars*, the *pins*, the *pawls*, the *ſwifter*, and the *ſaucer*, already deſcribed. The bars are long pieces of wood, or arms, thruſt into a number of ſquare holes in the drumhead all round, in which they are as the radii of a circle, or the ſpokes in the nave of a wheel. They are uſed to heave the capſtern round, which is done by the men ſetting their breaſts againſt them, and walking about, like the machinery of a horſe mill, till the operation is finiſhed.—The pins *e*, are little bolts of iron thruſt perpendicularly through the holes of the drumhead, and through a correſpondent hole in the end of the bar, made to receive the pins when the bars are fixed. They are uſed to confine the bars, and to prevent them from working out as the men heave, or when the ſhip labours. Every pin is faſtened to the drumhead with a ſmall iron chain; and that the bars may exactly fit their reſpective holes, they are all numbered. —The pawls *f*, N° 1. are ſituated on each ſide the capſtern, being two ſhort bars of iron, bolted at one end through the deck to the beams cloſe to the lower part of the whelps; the other end which occaſionally turns round on the deck, being placed in the intervals of the whelps, as the capſtern turns round, prevents it from recoiling or turning back by any ſudden jerk of the cable, as the ſhip riſes on the ſea, which might greatly endanger the men who heave. There are alſo hanging pawls *gg*, N° 3. uſed for the ſame purpoſes, reaching from the deck above to the drumhead immediately below it. The ſwifter is a rope paſſed horizontally through holes in the outer end of the bars, and drawn very tight; the intent of this is to keep the men ſteady as they walk round when the ſhip rocks, and to give room for a greater number to aſſiſt by pulling upon the ſwifter itſelf. Capſtan, Capſule.

The moſt frequent uſe of the capſtern is to heave in the cable, and thereby remove the ſhip or draw up the anchor. It is alſo uſed to wind up any weighty body, as the maſts, artillery, &c. In merchant ſhips it is likewiſe frequently employed to diſcharge or take in the cargo, particularly when conſiſting of weighty materials that require a great exertion of mechanical powers to be removed.

There are commonly two capſterns in a man of war, the *main* and the *gear* capſtern; the former of which has two drumheads, and may be called a *double one*. This is repreſented in N° 3. The latter is repreſented in N° 2.

Formerly the bars of the capſtern went entirely through the head of it, and conſequently were more than double the length of the preſent ones; the holes were therefore formed at different heights, as repreſented in N° 1. But this machine had ſeveral inconveniences, and has long been entirely diſuſed in the navy. Some of theſe ſort of capſterns, however, are ſtill retained in merchant ſhips, and are uſually denominated *crabs*. The ſituation of the bars in a crab, as ready for heaving, is repreſented in N° 4.

To rig the CAPSTERN, is to fix the bars in their reſpective holes, and thruſt in the pins, in order to confine them.—*Surge the* CAPSTERN, is the order to ſlacken the rope heaved round upon it, of which there are generally two turns and a half about the barrel at once, and ſometimes three turns.—*To Heave the* CAPSTERN, is to go round with it heaving on the bars, and drawing in any rope of which the purchaſe is created. —*To Come-up the* CAPSTERN, is to let go the rope upon which they had been heaving.—*To Pawl the* CAPSTERN, is to fix the pawls to prevent it from recoiling during any pauſe of heaving.

CAPSULE, in a general ſenſe, denotes a receptacle or cover in form of a bag.

CAPSULE, among botaniſts, a dry hollow ſeed-veſſel or pericarpium, that cleaves or ſplits in ſome determinate manner. See PERICARPIUM, BOTANY *Index*.

This ſpecies of ſeed-veſſel is frequently fleſhy and ſucculent, like a berry, before it has attained maturity; but, in ripening, becomes dry, and often ſo elaſtic as to dart the ſeeds from their departments with conſiderable velocity. This elaſticity is remarkably conſpicuous in wood ſorrel; balſam *impatiens*; African ſpiræa, *dioſma*; *fraxinella*; *juſticia*; *ruellia*; *barleria*; *lathræa*; and many others.—The general aptitude or diſpoſition of this ſpecies of ſeed-veſſel to cleave or ſeparate for the purpoſe of diſperſing its ſeeds, diſtinguiſhes it not leſs remarkably than its texture from the pulpy or ſucculent fruits of the apple, berry, and cherry kind. This opening of the capſule for diſcharging

Capſulæ atrabiliariæ, Captain.

ging its ſeeds when the fruit is ripe, is either at the top, as in moſt plants; at the bottom, as in triglochin; at the ſide, through a pore or ſmall hole, as in campanula and orchis; horizontally, as in plantain, amaranthus, and anagallis; or longitudinally, as in convolvulus. All fruit that is jointed opens at every one of the joints, each of which contains a ſingle ſeed. Capſules, in ſplitting, are divided, externally, into one or more pieces, called by Linnæus *valves*. The internal diviſions of the capſules are called *cells*, *loculamenta*: theſe, in point of number, are exceedingly diverſified; ſome having only one cell, as the primroſe; and others many, as the water lily. Hence a capſule is termed *unilocular*, *bilocular*, *trilocular*, &c. according as it has one, two, three, &c. cells or cavities.

Capsulæ Atrabiliariæ, called alſo *glandulæ renales*, and *renes ſuccenturiati*. See Anatomy *Index*.

CAPTAIN, a military officer, whereof there are ſeveral kinds, according to their commands.

Captain of a Troop or Company, an inferior officer who commands a troop of horſe or a company of foot, under a colonel. The duty of this officer is to be careful to keep his company full of able-bodied ſoldiers; to viſit their tents and lodgings, to ſee what is wanting; to pay them well; to cauſe them keep themſelves neat and clean in their clothes, and their arms bright. He has power in his own company of making ſerjeants, corporals, and lanſpeſades.

In the horſe and foot guards, the captains have the rank of colonels.

Captain General, he who commands in chief.

Captain Lieutenant, he who with the rank of captain, but the pay of lieutenant, commands a troop or company in the name and place of ſome other perſon who is diſpenſed with, on account of his quality, from performing the functions of his poſt.

Thus the colonel being uſually captain of the firſt company of his regiment, that company is commanded by his deputy under the title of *Captain-lieutenant*.

So in England, as well as in France, the king, queen, dauphin, princes, &c. have uſually the title of captain of the guards, *gens d'armes*, &c. the real duty of which offices is performed by captain-lieutenants.

Captain Reformed, one who, upon the reduction of the forces, has his commiſſion and company ſuppreſſed; yet is continued captain, either as ſecond to another, or without any poſt or command at all.

Captain of a Ship of War, the officer who commands a ſhip of the line of battle, or a frigate carrying 20 or more cannon. The charge of a captain in his majeſty's navy is very comprehenſive, in as much as he is not only anſwerable for any bad conduct in the military government, navigation, and equipment of the ſhip he commands, but alſo for any neglect of duty or ill management in his inferior officers, whoſe ſeveral charges he is appointed to ſuperintend and regulate.

On his firſt receiving information of the condition and quality of the ſhip he is appointed to command, he muſt attend her conſtantly, and haſten the neceſſary preparations to fit her for ſea. So ſtrict, indeed, are the injunctions laid on him by the lord high admiral, or commiſſioners of the admiralty, that he is forbid to lie out of his ſhip, from his arrival on board to the day of his diſcharge, unleſs by particular leave from the admiralty or from his commander in chief. Captain

He is enjoined to ſhow a laudable example of honour and virtue to the officers and men; and to diſcountenance all diſſolute, immoral, and diſorderly practices, and ſuch as are contrary to the rules of ſubordination and diſcipline; as well as to correct thoſe who are guilty of ſuch offences as are puniſhable according to the uſage of the ſea. He is ordered particularly to ſurvey all the military ſtores which are ſent on board, and to return whatever is deemed unfit for ſervice. His diligence and application are required to procure his complement of men; obſerving carefully to enter only ſuch as are fit for the neceſſary duty, that the government may not be put to unneceſſary expence. When his ſhip is fully manned, he is expected to keep the eſtabliſhed number of men complete, and ſuperintend the muſter himſelf if there is no clerk of the check at the port. When his ſhip is employed on a cruiſing ſtation, he is expected to keep the ſea the whole length of time previouſly appointed; but if he is compelled by ſome unexpected accident to return to port ſooner than the time limited, he ought to be very cautious in the choice of a good ſituation for anchoring, ordering the maſter or other careful officers to ſound and diſcover the depths of water and dangers of the coaſt. Previous to any poſſibility of an engagement with the enemy, he is to quarter the officers and men to the neceſſary ſtations according to their office and abilities, and to exerciſe them in the management of the artillery, that they may be more expert in time of battle. His ſtation in the time of an engagement is on the quarter-deck: at which time he is expected to take all opportunities of annoying his enemy, and improving every advantage over him; to exhibit an example of courage and fortitude to his officers and crew; and to place his ſhip oppoſite to his adverſary in ſuch a poſition as that every cannon ſhall do effectual execution. At the time of his arrival in port, after his return from abroad, he is to aſſemble his officers, and draw up a detail of the obſervations that have been made during the voyage, of the qualities of the ſhip as to her trim, ballaſt, ſtowage, manner of ſailing, for the information and direction of thoſe who may ſucceed him in the command: and this account is to be ſigned by himſelf and officers, and to be returned to the reſident commiſſioner of the navy at the port where the ſhip is diſcharged.

Captain of a Merchant-ſhip, he who has the direction of the ſhip, her crew, and lading, &c. In ſmall ſhips and ſhort voyages, he is more ordinary called the *maſter*. In the Mediterranean, he is called the *patroon*.—The proprietor of the veſſel appoints the captain or maſter; and he is to form the crew, and chooſe and hire the pilots, mates, and ſeamen; though, when the proprietor and maſter reſide on the ſame ſpot, they generally act in concert together.

Captain Baſhaw, or Capondan Baſhaw, in the polity of the Turks, ſignifies the Turkiſh high admiral. He poſſeſſes the third office of the empire, and is inveſted with the ſame power at ſea that the vizier has on ſhore. Soliman II. inſtituted this office in favour of the famous Barbaroſſa, with abſolute authority over the officers of the marine and arſenal, whom he may puniſh, caſhier, or put to death, as ſoon as he is without

Caption ‖ Captivity.

out the Dardanelles. He commands in chief in all the maritime countries, cities, caſtles, &c. and, at Conſtantinople, is the firſt magiſtrate of police in the villages on the ſide of the Porte, and the canal of the Black ſea. The mark of his authority is a large Indian cane, which he carries in his hand, both in the arſenal and with the army.—The captain baſhaw enjoys two ſorts of revenues; the one fixed, the other caſual. The firſt ariſes from a capitation of the iſlands in the Archipelago, and certain governments in Natolia and Galipoli. The latter conſiſts in the pay of the men who die during a campaign; in a fifth of all prizes made by the begs; in the profits accruing from the labour of the ſlaves, whom he hires as rowers to the grand ſignior; and in the contributions he exacts in all places where he paſſes.

CAPTION, in *Scots Law*, a writ iſſuing under his majeſty's ſignet, in his majeſty's name, obtained at the inſtance of a creditor in a civil debt, commanding meſſengers at arms and other officers of the law to apprehend and impriſon the perſon of the debtor until he pay the debt.—It is alſo the name of a writ iſſued by the court of ſeſſion againſt the agents of the court, to return papers belonging to proceſſes or law ſuits, or otherwiſe to go to priſon.

CAPTIVE, a ſlave or a perſon taken from the enemy.

Formerly captives in war became the ſlaves of thoſe who took them; and though ſlavery, ſuch as obtained among the ancients, is now aboliſhed, ſome ſhadow of it ſtill remains in reſpect of priſoners of war, who are accounted the property of their captors, and have no right to liberty but by conceſſion from them. —The Romans uſed their captives with great ſeverity; their necks were expoſed to the ſoldiers to be trampled on, and their perſons afterwards ſold by public auction. Captives were frequently burnt in the funeral piles of the ancient warriors, as a ſacrifice to the infernal gods. Thoſe of royal or noble blood had their heads ſhaven, and their hair ſent to Rome to ſerve as decorations for female toys, &c. They were led in triumph loaded with chains through Rome, in the emperor's train, at leaſt as far as the foot of the Capitoline mount, for they were not permitted to aſcend the ſacred hill, but carried thence to priſon. Thoſe of the prime quality were honoured with golden chains on their hands and feet, and golden collars on their necks. If they made their eſcape, or killed themſelves, to avoid the ignominy of being carried in triumph, their images or effigies were frequently carried in their place.

CAPTIVITY, in a general ſenſe, the ſtate or condition of a captive.

CAPTIVITY, in ſacred hiſtory, a puniſhment which God inflicted upon his people for their vices and infidelities. The firſt of theſe captivities is that of Egypt, from which Moſes delivered them; after which, are reckoned ſix during the government of the judges; but the greateſt and moſt remarkable were thoſe of Judah and Iſrael, which happened under the kings of each of theſe kingdoms. It is generally believed, that the ten tribes of Iſrael never came back again after their diſperſion; and Joſephus and St Jerome are of this opinion: nevertheleſs, when we examine the writings of the prophets, we find the return of Iſrael from captivity pointed out in a manner almoſt as clear as that of the tribes of Benjamin and Judah: See Hoſea i. 10, 11. Amos ix. 14. The captivities of Judah are generally reckoned four; the fourth and laſt of which fell in the year of the world 3416, under Zedekiah: and from this period begins the 70 years captivity foretold by Jeremiah.

Capture, Capua.

Since the deſtruction of the temple by the Romans, the Hebrews boaſt that they have always had their heads or particular princes, whom they call *princes of the captivity*, in the eaſt and weſt. The princes of the captivity in the eaſt governed the Jews that dwelt in Babylon, Aſſyria, and Perſia; and the princes of the captivity in the weſt governed thoſe who dwelt in Judæa, Egypt, Italy, and in other parts of the Roman empire. He who reſided in Judæa commonly took up his abode at Tiberias, and aſſumed the name of *Roſchabboth*, "head of the fathers or patriarchs." He preſided in aſſemblies, decided in caſes of conſcience, levied taxes for the expences of his viſits, and had officers under him who were deſpatched through the provinces for the execution of his orders. As to the princes of the captivity at Babylon, or the eaſt, we know neither the original nor ſucceſſion of them. It only appears that they were not in being before the end of the ſecond century.

CAPTURE, a prize, or prey; particularly that of a ſhip taken at ſea. Captures made at ſea were formerly held to be the property of the captors after a poſſeſſion of twenty-four hours; but the modern authorities require, that before the property can be changed, the goods muſt have been brought into port, and have continued a night *intra præſidia*, in a place of ſafe cuſtody, ſo that all hope of recovering them was loſt.

CAPTURE alſo denotes an arreſt or ſeizure of a criminal, debtor, &c. at land.

CAPUA, in *Ancient Geography*, a very ancient city of Italy, in Campania, and capital of that diſtrict. It is famous for the abode of Hannibal the Carthaginian general after the battle of Cannæ, and where Livy accuſes him, but unjuſtly, of having enervated himſelf with pleaſures *. It ſtill retains the name, and is the ſee of an archbiſhop. It is ſeated on the river Volturno, in E. Long. 15. 5. N. Lat. 41. 7. The hiſtory of Capua is thus ſhortly deduced by Mr Swinburne. "It was a ſettlement of the Oſci long before the foundation of Rome. As the amazing fertility of the land and a lucrative commerce poured immenſe wealth upon its inhabitants, it became one of the moſt extenſive and magnificent cities in the world. With riches exceſſive luxury crept in, and the Capuans grew inſolent; but by their effeminacy they ſoon loſt the power of repelling thoſe neighbouring nations which their inſolence had exaſperated. For this reaſon Capua was continually expoſed to the neceſſity of calling in foreign aid, and endangering its ſafety by the uncommon temptations it offered to needy auxiliaries. The Roman ſoldiers ſent to defend Capua were on the point of making it their prey, and often the voice of the Roman people was loud for a removal from the barren unwholeſome banks of the Tiber to the garden of Italy, near thoſe of the Volturno. Through well-founded jealouſy of the ambition of Rome, or, as Livy and other partial writers term it, natural inconſtancy, the

* See *Carthage*.

Capua, Capuchins.

the Capuans warmly eſpouſed the quarrel of Carthage: Hannibal made Capua his winter quarters after the campaign of Cannæ; and there, if we are to believe hiſtorians, his rough and hitherto invincible ſoldiers were enervated by pleaſure and indolence.

"When through a failure of ſupplies from Carthage Hannibal was under a neceſſity of remaining in Bruttium, and leaving the Capuans to defend themſelves, this city, which had been long inveſted, was ſurrendered at diſcretion to the conſuls Appius Claudius and Q. Fulvius Flaccus. The ſenators were put to death, the nobles impriſoned for life, and all the citizens ſold and diſperſed. Vibius, the chief of Hannibal's friends, avoided this ignominious fate, and eſcaped from the cruel vengeance of the Romans by a voluntary death.—When the mob inſiſted upon the gates being thrown open to the enemy, Vibius aſſembled his ſteady aſſociates, and ſat down with them to a ſuperb banquet, after which each of the gueſts ſwallowed a poiſonous draught, and expired in full poſſeſſion of their freedom. The buildings were ſpared by the victor; and Capua was left to be merely a harbour for the huſbandmen of the plain, a warehouſe for goods, and a granary for corn; but ſo advantageous a ſituation could not long be neglected; colonies were ſent to inhabit it, and in proceſs of time it regained a degree of importance.

"Genſeric the Vandal was more cruel than the Roman conquerors had been; for he maſſacred the inhabitants, and burnt the town to the ground. Narſes rebuilt it; but in 841 it was totally deſtroyed by an army of Saracens, and the inhabitants driven into the mountains. Some time after the retreat of theſe ſavage invaders, the Lombards ventured down again into the plain; but not deeming their force adequate to the defence of ſo large a circuit as the old city, they built themſelves a ſmaller one on the river, and called it Capua.—They choſe the ſite of Caſilinum, famous in the ſecond Punic war, for the reſiſtance made by its garriſon againſt Hannibal. Since the foundation of the new city, Old Capua has remained in ruins.

"In 856, Landulph formed here an independent earldom diſmembered from the duchy of Benevento, and in the courſe of a few generations Capua acquired the title of a principality. In the 11th century, the Normans of Averſa expelled the Lombard race of princes, and Richard their chief became prince of Capua; the grandſon of Tancred of Hauteville drove out the deſcendants of Richard, and united this ſtate to the reſt of his poſſeſſions.

"Capua is at preſent a neat little city, fortified according to the rules of modern art, and may be conſidered as the key of the kingdom; though far removed from the frontier, it is the only fortification that really covers the approach to Naples."

CAPUCHINS, religious of the order of St Francis in its ſtricteſt obſervance; deriving their name from *capuce*, or *capuchon*, a ſtuff cap, or cowl, wherewith they cover their heads. They are clothed with brown or gray; always barefooted; are never to go in a coach, nor ever ſhave their beard.—The Capuchins are a reform made from the order of Minors, commonly called *Cordeliers*, ſet on foot in the 16th century by Matthew Baſchi, a religious obſervant of the monaſtery of Monteſiaſcone; who, being at Rome, was advertiſed ſeveral times from heaven, to practiſe the rule of St Francis to the letter. Upon this he made application to Pope Clement in 1525: who gave him permiſſion to retire into a ſolitude, with as many others as choſe to embrace the ſtrict obſervance. In 1528, they obtained the pope's bull. In 1529, the order was brought into complete form: Matthew was elected general, and the chapter made conſtitutions. In 1543, the right of preaching was taken from the Capuchins by the pope: but in 1545 it was reſtored to them again with honour. In 1578, there were already 17 general chapters in the order of Capuchins.

Caput ‖ Caracalla.

CAPUT, the head. See HEAD.

CAPUT baroniæ, the head of the barony, in ancient cuſtoms, denotes the ancient or chief ſeat or caſtle of a nobleman, where he made his uſual reſidence, and held his court; ſometimes alſo called *caput honoris*, or the head of the honour. The caput baroniæ could not be ſettled in dowry; nor could it be divided among the daughters, in caſe there was no ſon to inherit; but was to deſcend entire to the eldeſt daughter, *cæteris filiabus aliunde ſatisfactis*.

CAPUT gallinaginis, in *Anatomy*, is a kind of ſeptum, or ſpongy border, at the extremities or apertures of each of the *veſiculæ ſeminales*; ſerving to prevent the ſeed coming from one ſide, from ruſhing upon, and ſo ſtopping, the diſcharge of the other.

CAPUT lupinum. Anciently an outlawed felon was ſaid to have *caput lupinum*, and might be knocked on the head like a *wolf*, by any one that ſhould meet him; becauſe, having renounced all law, he was to be dealt with as in a ſtate of nature, when every one that ſhould find him might ſlay him; yet now, to avoid ſuch inhumanity, it is holden that no man is entitled to kill him wantonly and wilfully; but in ſo doing he is guilty of murder, unleſs it is done in the endeavour to apprehend him.

CAPUT Mortuum, a Latin name given to fixed and exhauſted reſiduums remaining in retorts after diſtillations. As theſe reſiduums are very different, according to the ſubſtances diſtilled, and the degree of heat employed, they are by the more accurate modern chemiſts particularly ſpecified by adding a term denoting their qualities; as *earthy reſiduum*, *charry reſiduum*, *ſaline reſiduum*, &c.

CARABINE, a fire arm ſhorter than a muſket, carrying a ball of 24 in the pound, borne by the light horſe, hanging at a belt over the left ſhoulder. The barrel is two feet and a half long; and is ſometimes furrowed ſpirally within, which is ſaid to add to the range of the piece.

CARABINEERS, regiments of light horſe, carrying longer carabines than the reſt, and ſometimes uſed on foot.

CARABUS. See ENTOMOLOGY *Index*.

CARACALLA, M. ANTONINUS BASSIANUS, emperor after his father Severus in 211, put the phyſicians to death for not deſpatching his father, as he would have had them. He killed his brother Geta; and put Papinianus to death, becauſe he would not defend nor excuſe his parricide. In ſhort, it is ſaid that 20,000 perſons was maſſacred by his order. He married Julia, his father's widow. Going to Alexandria, he ſlew the inhabitants, and applied to the magicians and aſtrologers. At laſt, going from Edeſſa to Meſopotamia,

Caracalla || Caracci.

one of his captains ſlew him, by order of Macrinus, who ſucceeded him. He died after he had reigned ſomewhat more than ſix years.

CARACALLA, in antiquity, a long garment, having a ſort of capuchin, or hood a-top, and reaching to the heels; worn equally among the Romans by the men and the women, in the city and the camp. Spartian and Xiphilian repreſent the emperor Caracalla as the inventor of this garment, and hence ſuppoſe the appellation *Caracalla* was firſt given him. Others, with more probability, make the caracalla originally a Gallic habit, and only brought to Rome by the emperor above-mentioned, who firſt enjoined the ſoldiery to wear it. The people call it *antoninian*, from the ſame prince, who had borrowed the name of Antoninus. The caracalla was a ſort of caſſock, or ſurtout. Salmaſius, Scaliger, and after them Du Cange, even take the name *caſaque* to have been formed from that of *caraque*, for *caracalla*. This is certain from St Jerome, that the caracalla, with a retrenchment of the capuchin, became an eccleſiaſtical garment. It is deſcribed as made of ſeveral pieces cut and ſewed together, and hanging down to the feet; but it is more than probable there were ſome made ſhorter, eſpecially out of Rome, otherwiſe we do not ſee how it could have fitted the ſoldiers purpoſes.

CARACCAS, a diſtrict of Terra Firma in South America, belonging to the Spaniards. The coaſt is rocky and mountainous, interſperſed with ſmall fertile valleys; ſubjected at certain ſeaſons of the year to dry north-weſt winds, but bleſſed in general with a clear air and wholeſome climate. A very great illicit trade is carried on by the Engliſh and Dutch with this province, notwithſtanding all the vigilance of the Spaniards, who have ſcouts perpetually employed, and breaſtworks raiſed in all the valleys. A vaſt number of cacao trees are cultivated in this province; and it is reckoned that the crop of cacao produced here amounts to more than 100,000 fanegas of 110 pounds each. The country of Santa Fe conſumes 20,000; Mexico a little more; the Canaries a ſmall cargo; and Europe from 50 to 60,000. The cultivation of the plant employs 10 or 12,000 negroes. Such of them as have obtained their liberty have built a little town called *Nirva*, into which they will not admit any white people. The chief town is likewiſe called *Caraccas*, and is ſituated in N. Lat. 10. 10. Dampier ſays it ſtands at a conſiderable diſtance from the ſea; is large, wealthy, and populous; and extremely difficult of acceſs, by reaſon of the ſteep and craggy hills over which an enemy muſt take his rout. The commerce of this town, to which the bay of Guaira at two leagues diſtance ſerves for a harbour, was for a long time open to all the ſubjects of the Spaniſh monarchy, and is ſtill ſo to the Americans; but the Europeans are not ſo well treated. In 1728 a company was formed at St Sebaſtian, which obtained an excluſive right of maintaining connexions with this part of the new world. Four or five ſhips which they diſpatch every year, ſail from thence, but they return to Cadiz.

CARACCI, LEWIS, AUGUSTINE, and HANNIBAL, three celebrated painters of the Lombard ſchool, all of Bologna. Lewis was born in 1555; and was couſin-german to Auguſtine and Hannibal, who were brothers, the ſons of a taylor, who was yet careful to give them a liberal education. They were both diſciples of their couſin Lewis. Auguſtine gained a knowledge of mathematics, natural philoſophy, muſic, poetry, and moſt of the liberal arts; but, though painting was his principal purſuit, he learned the art of engraving from Cornelius Cort, and ſurpaſſed all the maſters of his time. Hannibal, again, never deviated from his pencil. —Theſe three painters, at length, having reaped all the advantages they could by contemplation and practice, formed a plan of aſſociation, continued always together, and laid the foundation of that celebrated ſchool which has ever ſince been known by the name of *Caracci's academy*. Hither all the young ſtudents, who had a view of becoming maſters, reſorted to be inſtructed in the rudiments of painting; and here the Caracci taught freely, and without reſerve, all that came. Lewis's charge was to make a collection of antique ſtatues and baſs reliefs. They had deſigns of the beſt maſters, and a collection of curious books on all ſubjects relating to their art; and they had a ſkilful anatomiſt always ready to teach what belonged to the knitting and motions of the muſcles, &c. There were often diſputations in the academy; and not only painters, but men of learned profeſſions, propoſed queſtions, which were always decided by Lewis. Every body was well received; and though ſtated hours were allotted to treat of different matters, yet improvements might be made at all hours by the antiquities and the deſigns which were to be ſeen. Caracci.

The fame of the Caracci reaching Rome, the cardinal Farneſe ſent for Hannibal thither, to paint the gallery of his palace. Hannibal was the more willing to go, becauſe he had a great deſire to ſee Raphael's works, with the antique ſtatues and baſs reliefs. The guſto which he took there from the ancient ſculpture, made him change his Bolognian manner for one more learned but leſs natural in the deſign and in the colouring.— Auguſtine followed Hannibal, to aſſiſt him in his undertaking of the Farneſe gallery; but the brothers not rightly agreeing, Farneſe ſent Auguſtine to the court of the duke of Parma, where he died in the year 1602, being only 45 years of age. His moſt celebrated piece of painting is that of the Communion of St Jerome, in Bologna.

In the mean while, Hannibal continued working in the Farneſe gallery at Rome; and, after inconceivable pains and care, finiſhed the paintings in the perfection in which they are now to be ſeen. He hoped that the cardinal would have rewarded him in ſome proportion to the excellence of his work, and the time it took him up, which was eight years; but he was diſappointed. The cardinal, influenced by an ignorant Spaniard, his domeſtic, gave him but a little above 200l. though it is certain he deſerved more than twice as many thouſands. When the money was brought him, he was ſo ſurpriſed at the injuſtice done him, that he could not ſpeak a word to the perſon who brought it. This confirmed him in a melancholy to which his temper naturally inclined, and made him reſolve never more to touch his pencil; which reſolution he had undoubtedly kept if his neceſſities had not compelled him to break it. It is ſaid, that his melancholy gained ſo much upon him, that at certain times it deprived him of the uſe of his ſenſes. It did not, however, put a ſtop to his amours; and his debauches at Naples, whither he had retired for

the

Caracol || Caract.

the recovery of his health, brought a diſtemper upon him, of which he died in 1609, when he was 49 years of age. His veneration for Raphael was ſo great, that it was his deathbed requeſt to be buried in the ſame tomb with him; which was accordingly done, in the pantheon or rotunda at Rome. There are extant ſeveral prints of the bleſſed Virgin, and ſome other ſubjects, etched by the hand of this incomparable artiſt. He is ſaid to have been a friendly, plain, honeſt, and open-hearted man; very communicative to his ſcholars, and ſo extremely kind to them, that he generally kept his money in the ſame box with his colours, where they might have recourſe to either as they had occaſion.

While Hannibal Caracci worked at Rome, Lewis was courted from all parts of Lombardy, eſpecially by the clergy, to make pictures in their churches; and we may judge of his capacity and facility, by the great number of pictures he made, and by the preference that was given him to other painters. In the midſt of theſe employments Hannibal ſolicited him to come and aſſiſt him in the Farneſe gallery; and ſo earneſtly, that he could not avoid complying with his requeſt. He went to Rome; corrected ſeveral things in that gallery; painted a figure or two himſelf; and then returned to Bologna, where he died in 1619, aged 64.

CARACOL, in the manege, the half turn which a horſeman makes, either to the right or left.—In the army, the horſe always makes a caracol after each diſcharge, in order to paſs the rear of the ſquadron.

Caracol, in *Architecture*, denotes a ſtaircaſe in a helix or ſpiral form.

CARACOLI, a kind of metal of which the Caribbees, or natives of the Leſſer Antilles, make a ſort of ornament in the form of a creſcent, which they alſo call *caracoli*.—This metal comes from the main land; and the common opinion is, that it is a compound of ſilver, copper, and gold, ſomething like the Corinthian braſs among the ancients. Theſe metals are ſo perfectly mixed and incorporated together, that the compound which reſults from them, it is ſaid, has a colour that never alters, how long ſoever it remains in the ſea or under ground. It is ſomewhat brittle; and they who work at it are obliged to mix a large proportion of gold with it, to make the compound more tough and malleable.

CARACT, or Carat, the name of that weight which expreſſes the degree of fineneſs that gold is of. The word is alſo written *carract*, *carrat*, *karract*, and *karrat*. Its origin is conteſted: but the moſt probable opinion is, that of Kennet, who derives it from *carecta*, a term which anciently denoted any weight, and came not till of later days to be appropriated to that which expreſſes the fineneſs of gold and the gravity of diamonds.

Theſe carrats are not real determinate weights, but only imaginary. The whole maſs, be the weight what it will, is conceived to be divided into 24 carats; and as many 24th parts as it contains of pure gold, it is called *gold of ſo many carats* or *ſo many carats fine*. Thus, gold of 18 carats is a mixture, of which 18 parts are pure gold, and the other ſix an inferior metal, &c.—This is the common way of reckoning in Europe, and at the gold mines in the Spaniſh Weſt Indies, but with ſome variation in the ſubdiviſion of the carat: among us, it is divided into four grains; among the Germans, into 12 parts; and by the French, according to Mr Helot, into 32. The Chineſe reckon by a different diviſion called *touches*, of which the higheſt number, or that which denotes pure gold, is 100; ſo that 100 touches correſpond to our 24 carats, &c.

Caract || Caraites.

Caract is alſo a certain weight which goldſmiths and jewellers uſe wherewith to weigh precious ſtones and pearls.—In this ſenſe, the word is by ſome ſuppoſed to be derived from the Greek κεράτιον, a fruit which the Latins call *ſiliqua*, and we *carob bean*; each of which may weigh about four grains of wheat, whence the Latin *ſiliqua* has been uſed for a weight of four grains. This caract weighs four grains, but they are ſometimes lighter than the grains of other weights. Each of theſe grains is ſubdivided in $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$, $\frac{1}{16}$, &c.

CARACTACUS, a renowned king of the ancient Britiſh people called *Silures*, inhabiting South Wales. Having valiantly defended his country ſeven years againſt the Romans, he was at length defeated; and flying to Cartiſmunda, queen of the Brigantes (inhabitants of Yorkſhire), was by her treacherouſly delivered up to the Romans, and led in triumph to the emperor Claudius then at York; where his noble behaviour, and heroic but pathetic ſpeech, obtained him not only his liberty, but the eſteem of the emperor, A. D. 52.

CARAGROUTH, in commerce, a ſilver coin of the empire, weighing nine drachms. It goes at Conſtantinople for 120 aſpers. There are four ſorts of them, which are all equally current and of the ſame value.

CARAITES, in the eccleſiaſtical hiſtory of the Jews, a religious ſect among that people, whereof there are ſtill ſome ſubſiſting in Poland, Ruſſia, Conſtantinople, Cairo, and other places of the Levant, whoſe diſtinguiſhing tenet and practice it is, to adhere cloſely to the words and letter of the Scripture, excluſive of allegories, traditions, and the like.

Leo of Modena, a rabbin of Venice, obſerves, that of all the hereſies among that people, before the deſtruction of the temple, there is none now left but that of the *Caraim*, a name derived from *Micra*, which ſignifies the pure text of the Bible, becauſe of their keeping to the Pentateuch, obſerving it to the letter, and rejecting all interpretations, paraphraſes, and conſtitutions of the rabbins. Aben Ezra, and ſome other rabbins, treat the Caraites as Sadducees; but Leo de Juda calls them, more accurately, Sadducees reformed; becauſe they believe the immortality of the ſoul, paradiſe, hell, reſurrection, &c. which the ancient Sadducees denied. He adds, however, that they were doubtleſs originally real Sadducees, and ſprung from among them.

M. Simon, with more probability, ſuppoſes them to have riſen hence; that the more knowing among the Jews oppoſing the dreams and reveries of the rabbins, and uſing the pure texts of Scripture to refute their groundleſs traditions, had the name of *Caraim* given them; which ſignifies as much as the barbarous Latin *Scripturarii*; i. e. people attached to the text of Scripture. The other Jews gave them the odious name Sadducees, from their agreement with thoſe ſectaries on the head of traditions. Scaliger, Voſſius, and Spanheim,

Caraites. heim, rank the Caraites among the Sabeans, Magi, Manichees, and Muſſulmans, but by miſtake: Wolfgang, Fabricius, &c. ſay the Sadducees and Eſſeni were called Caraites, in oppoſition to the Phariſees; others take them for the doctors of the law ſo often mentioned in the Goſpel: but theſe are all conjectuers. Joſephus and Philo make no mention of them; which ſhows them to be more modern than either of thoſe authors. In all probability, this ſect was not formed till after the collection of the ſecond part of the Talmud, or the Gemara; perhaps not till after the compiling of the Miſchna in the third century. The Caraites themſelves pretend to be the remains of the ten tribes led captive by Shalmaneſer. Wolfius, from the Memoirs of Mardacheus, a Caraite, refers their origin to a maſſacre among the Jewiſh doctors, under Alexander Jannæus, their king, about 100 years before Chriſt: becauſe Simeon, ſon of Schetach, and the queen's brother, making his eſcape into Egypt, there forged his pretended traditions; and, at his return to Jeruſalem, publiſhed his viſions; interpolating the law after his own fancy, and ſupporting his novelties on the notices which God, he ſaid, had communicated by the mouth of Moſes, whoſe depoſitary he was: he gained many followers; and was oppoſed by others, who maintained, that all which God had revealed to Moſes was written. Hence the Jews became divided into two ſects, the Caraites and Traditionaries: among the firſt, Juda, ſon of Tabbai, diſtinguiſhed himſelf; among the latter, Hillel. Wolfius reckons not only the Sadducees, but alſo the Scribes, in the number of Caraites. But the addreſs of the Phariſees prevailed againſt them all; and the number of Caraites decreaſed: Anan, indeed, in the eighth century, retrieved their credit a little; and Rabbi Schalomon in the ninth. They ſucceeded pretty well till the fourteenth; but ſince that time they have been declining.

The Caraites are but little known; their works coming only into very few hands, even among the greateſt Hebraiſts. Buxtorf never ſaw more than one; Selden two; but Mr Trigland ſays, he has recovered enough to ſpeak of them with aſſurance. He aſſerts, that ſoon after the prophets had ceaſed, the Jews became divided on the ſubject of works, and ſupererogation: ſome maintaining their neceſſity from tradition; whilſt others, keeping cloſe to the written law, ſet them aſide; and it was from theſe laſt that Caraitiſm commenced. He adds, that after the return from the Babyloniſh captivity, the obſervation of the law being to be re-eſtabliſhed, there were ſeveral practices found proper for that end; and theſe once introduced, were looked upon as eſſential, and appointed by Moſes; which was the origin of Phariſaiſm: as a contrary party, continuing to keep cloſe to the letter, founded Caraitiſm.

The modern Caraites, Leo of Modena obſerves, have their ſynagogues and ceremonies; they pretend to be the ſole proper Jews, or obſervers of the laws of Moſes; calling the reſt by the term *Rabbanim*, or *followers of the Rabbins:* theſe hate the Caraites mortally; refuſing to ally or even to converſe with them, and treating them as *mamzeim*, baſtards; becauſe of their rejecting the conſtitutions of the rabbins relating to marriages, repudiations, purifications of women, &c. This averſion is ſo great, that if a Caraite ſhould become a Rabbiniſt, he would never be received by the other Jews. Caraites || Carara.

The Caraites, however, do not abſolutely reject all kinds of traditions; but only ſuch as do not appear well grounded. Selden, who is very expreſs on this point, in his Uxor Hebraica, obſerves, that, beſides the mere text, they have certain interpretations, which they call hereditary, and which are proper traditions. Their theology only ſeems to differ from that of the other Jews, in that it is purer, and clearer of ſuperſtition: they give no credit to the explications of the Cabbaliſts, chimerical allegories, nor to any conſtitutions of the Talmud, but what are conformable to the Scripture, and may be drawn from it by juſt and neceſſary conſequences.

Peringer obſerves of the Caraites in Lithuania, that they are very different, both in aſpect, language, and manners, from the Rabbiniſts, wherewith the country abounds. Their mother tongue is the Turkiſh; and this they uſe in their ſchools and ſynagogues. In viſage they reſemble the Mahometan Tartars. Their ſynagogues are placed north and ſouth; and the reaſon they give for it is, that Shalmaneſer brought them northward: ſo that in praying, to look to Jeruſalem, they muſt turn to the ſouth. He adds, that they admit all the books of the Old Teſtament; contrary to the opinion of many of the learned, who hold that they reject all but the Pentateuch.

Caleb, a Caraite, reduces the difference between them and the Rabbiniſts to three points: 1. In that they deny the oral law to have come from Moſes, and reject the Cabbala. 2. In that they abhor the Talmud. 3. In that they obſerve the feaſts, as the ſabbaths, &c. much more rigorouſly than the Rabbins do. To this may be added, that they extend the degrees of affinity, wherein marriage is prohibited, almoſt to infinity.

CARAMANIA, a conſiderable province of Turkey in Aſia, in the ſouth part of Natolia. Bajazet united this province to his empire about the year 1488, and ſince that time it has continued in the poſſeſſion of the Turks. Satalia was the capital city, but is now much decayed.

CARAMANTA, a town of South America, and capital of a province of the ſame name in Terra Firma, and in the audience of Santa Fe. W. Long. 72. 35. N. Lat. 5. 18. The province of Caramanta is extended on both ſides the river Cauca; and is bounded on the north by the diſtrict of Carthagena, on the eaſt by New Grenada, on the ſouth by Popayan, and on the weſt by Popayan and by the audience of Panama. It is a valley ſurrounded on every ſide by very high mountains.

CARANGA, an inconſiderable iſland near Bombay in the Eaſt Indies. It affords nothing but ſome rice, fowls, and goats, for that market.

CARANNA, or KARANNA, a very ſcarce gum which comes from New Spain. It is ſaid to poſſeſs many extraordinary medical virtues, but the preſent practice takes no notice of it.

CARANUS, the firſt king of Macedon, and the ſeventh of the race of the Heraclidæ. See MACEDONIA.

CARARA, a weight at Leghorn, and in other parts of Italy, uſed in the ſale of wool and cod fiſh, equivalent to 60 pounds of that country.

CARAT.

Carat || Caravanſera.

CARAT. See CARACT.

CARAVAGGIO, MICHAEL ANGELO. See ANGELO.

CARAVAN, or KARAVANNE, in the eaſt, ſignifies a company or aſſembly of travellers and pilgrims, and more particularly of merchants, who, for their greater ſecurity, and in order to aſſiſt each other, march in a body through the deſerts, and other dangerous places, which are infeſted with Arabs or robbers.

There are four regular caravans which go yearly to Mecca; the firſt from Damaſcus, compoſed of the pilgrims from Europe and Aſia: the ſecond from Cairo, for the Mahomedans of Barbary; the third from Zibith, a place near the mouth of the Red ſea, where thoſe of Arabia and India meet; the fourth from Babylon, where the Perſians aſſemble. Moſt of the inland commerce of the Eaſt is carried on by caravans. The late czar Peter the Great eſtabliſhed a trade between Ruſſia and China by means of a caravan. M. Bougnon, geographer to the duke of Lorrain, has given a treatiſe of the caravans of merchants in Aſia; wherein he ſhows of what they are compoſed, how many ſorts there are; the ſeveral uſes of the different ſorts of animals in them; the prices given for them, the officers and men appointed to conduct them, and the pay of each, with their manner of marching, halting, fighting, retreating, &c. Caravans of this kind are large convoys of armed men, merchants, and travellers, with divers ſorts of animals for the carriage of their proviſions. There are commonly four chief officers of a caravan, viz. the caravan bachi, or chief; the captain guide; captain of reſt; and captain of diſtribution. The firſt has abſolute command over all the reſt: the ſecond is abſolute in the march; the office of the third only commences when the caravan ſtops and makes a ſtay: to the fourth it belongs to diſpoſe of every part of the corps, in caſe of an attack or battle; he has alſo the inſpection over the diſtribution of proviſions, which is made under him by ſeveral diſtributors, who give ſecurity to the maſter of the caravan, and have each of them a certain number of perſons, elephants, dromedaries, &c. to take care of at their own peril. The treaſurer of the caravan makes a fifth officer, who has under him ſeveral agents and interpreters, who keep journals of all that paſſes, for the ſatisfaction of thoſe concerned in fitting out the caravan.

Any dealer is at liberty to form a company, in order to make a caravan. He in whoſe name it is raiſed, is conſidered as the caravan bachi, or chief of the caravan, unleſs he appoint ſome other in his place. If there are ſeveral merchants equally concerned, they elect a caravan bachi; after which, they appoint officers to conduct the caravan, and decide all controverſies that may ariſe during the journey.

There are alſo ſea caravans; eſtabliſhed on the ſame footing, and for the ſame purpoſe: ſuch is the caravan of veſſels from Conſtantinople to Alexandria.

CARAVANSERA, or KARAVANSERA, a place appointed for receiving and loading the caravans.

It is commonly a large ſquare building, in the middle of which there is a very ſpacious court; and under the arches or piazzas that ſurround it there runs a bank, raiſed ſome feet above the ground, where the merchants, and thoſe who travel with them in any capacity, take up their lodgings as well as they can; the beaſts of burden being tied to the foot of the bank. Over the gates that lead into the court, there are ſometimes little rooms, which the keepers of the caravanſeras let out at a very high price to ſuch as have a mind to be private.

Caravanſeraſkier || Carbuncle.

The caravanſeras in the eaſt are ſomething of the nature of the inns in Europe; only that you meet with little accommodation either for man or beaſt, but are obliged to carry almoſt every thing with you: there is never a caravanſera without a well, or ſpring of water. Theſe buildings are chiefly owing to the charity of the Mahometans: they are eſteemed ſacred dwellings, where it is not permitted to inſult any perſon, or to pillage any of the effects that are depoſited there. There are alſo caravanſeras where moſt things may be had for money; and as the profits of theſe are conſiderable, the magiſtrates of the cities to whoſe juriſdiction they belong, take care to ſtore them well. There is an inſpector, who, at the departure of each caravan, fixes the price of the night's lodging, from which there is no appeal.

CARAVANSERASKIER, the ſteward or keeper of a CARAVANSERA. He keeps an account of all the merchandiſes that are ſold upon truſt, and demands the payments of the ſums due to the merchants for what has been ſold in the caravanſera, on the ſeller's paying two per cent.

CARAVEL; thus they call a ſmall veſſel on the coaſt of France, which goes to fiſh for herring on the banks. They are commonly from 25 to 30 tons burden. Thoſe which are deſigned for the ſame fiſhery in the Britiſh channel are called by the French *trinquarts*; theſe are from 12 to 15 tons burden.

CARAWAY. See CARUM, BOTANY *Index*.

CARBONADE, or CARBONADO, in cookery; fleſh, fowl, or the like, ſeaſoned and broiled on the coals.

CARBUNCLE, in *Natural Hiſtory*, a very elegant gem, whoſe colour is deep red, with an admixture of ſcarlet.

This gem was known among the ancients by the name of *anthrax*. It is uſually found pure and faultleſs, and is of the ſame degree of hardneſs with the ſapphire: it is naturally of an angular figure; and is found adhering by its baſe, to a heavy and ferruginous ſtone of the emery kind: its uſual ſize is near a quarter of an inch in length, and two-thirds of that in diameter in its thickeſt parts: when held up againſt the ſun, it loſes its deep tinge, and becomes exactly of the colour of a burning charcoal, whence the propriety of the name which the ancients gave it. It bears the fire unaltered, not parting with its colour, nor becoming at all the paler by it. It is found only in the Eaſt Indies, ſo far as is yet known; and there but very rarely.

CARBUNCLE, or *Anthrax*, in *Medicine*, an inflammation which ariſes, in time of the plague, with a veſicle or bliſter almoſt like that produced by burning.

CARBUNCLE, in *Heraldry*, a charge or bearing, conſiſting of eight radii, four whereof make a common croſs, and the other four a ſaltier.

Some call theſe radii *buttons*, or ſtaves, becauſe round, and enriched with buttons, or pearled like pilgrims ſtaves, and frequently tipped or terminated with flower-de-luces.

Carcaſſe, Carcaſſonne

de-luces: others blazon them, royal ſcepters, placed in ſaltier, pale and feſſe.

CARCASSE, or CARCUS, in the art of war, an iron caſe, or hollow capacity, about the bigneſs of a bomb, of an oval figure, made of ribs of iron, filled with combuſtible matters, as meal powder, ſaltpetre, ſulphur, broken glaſs, ſhavings of horn, turpentine, tallow, &c. It has two or three apertures out of which the fire is to blaze, and the deſign of it is to be thrown out of a mortar, to ſet houſes on fire, and do other execution. It has the name *carcaſſe*, becauſe the circles which paſs from one ring or plate to the other ſeem to repreſent the ribs of a human carcaſe.

CARCASSONNE, an ancient city of France, in Lower Languedoc, with a biſhop's ſee. It is divided into the upper and lower town. They are both ſurrounded with walls: and though their ſituations are different, they are both watered by the river Aude. The upper town is ſeated on a hill, with a caſtle that commands it, as well as the lower town. It is ſtrong, not only by its ſituation on a craggy rock, but alſo by ſeveral large towers which are joined to its walls, and which render it of difficult acceſs. The cathedral church is remarkable for nothing but its antiquity. The lower town is large, and built after the modern taſte. The ſtreets are very ſtraight, and lead to a large ſquare in the middle, from whence may be ſeen the four gates of the town. There is here a manufacture of cloth. The neighbouring country is full of olive-trees; and in the mountains there is a fine marble, commonly called *marble of Languedoc*. E. Long. 2. 25. N. Lat. 43. 11.

This place bore a conſiderable ſhare in that celebrated cruſade undertaken againſt the Albigenſes in the beginning of the 13th century, and which forms one of the moſt aſtoniſhing inſtances of ſuperſtition and of atrocious barbarity to be found in the annals of the world. When the royal power was nearly annihilated, during the reigns of the laſt kings of the Carlovingian race in France, moſt of the cities of Languedoc erected themſelves into little independent ſtates, governed by their own princes. Carcaſſonne was then under the dominion of viſcounts. At the time when Pope Innocent III. patronized and commanded the proſecution of hoſtilities againſt the Albigenſes for the crime of hereſy, Raymond the reigning viſcount was included in that proſcription. Simon de Montfort, general of the army of the church, inveſted the city of Carcaſſone in 1209. The inhabitants, terrified at the fate of ſeveral other places where the moſt dreadful maſſacres had been committed, demanded leave to capitulate; but this act of mercy was only extended to them under a condition equally cruel, incredible, and unparalleled in hiſtory, if we were not compelled to believe it by the unanimous teſtimony of all the cotemporary writers. The people found in the place were all obliged, without diſtinction of rank or ſex, to evacuate it in a ſtate of nudity; and Agnes the viſcounteſs was not exempted, though young and beautiful, from this ignominious and ſhocking puniſhment. "On les fit ſortir tout nuds de la ville de Carcaſſonne (ſays an ancient author) afin qu'ils receuſſent de la honte, en montrant ces parties du corps que la pureté de la langue n'exprime point, deſquelles ils avoient abuſé, et s'en étoient ſervis dans des crimes execrables." It ſeems by this imputation that the Albigenſes were accuſed by their enemies of ſome enormities, probably unjuſt, and ſimilar to thoſe which religious enmity and prejudice have attributed to the followers of Zinzendorf in the preſent century.

Carceres ‖ Card.

CARCERES, in the ancient Circenſian games, were incloſures in the circus, wherein the horſes were reſtrained till the ſignal was given for ſtarting, when by an admirable contrivance, they all at once flew open.

CARCHEMISH, in *Ancient Geography*, a town lying upon the Euphrates, and belonging to the Aſſyrians. Necho king of Egypt took it from the king of Aſſyria, 2 Chr. xxxv. 20. Necho left a garriſon in it, which was taken and cut to pieces, in the fourth year of Jehoiachin king of Judah, by Nebuchadnezzar king of Babylon, 2 Kings xxiii. 29. Iſaiah (x. 9.) ſpeaks of Carchemiſh, and ſeems to ſay, that Tiglath-pileſer made a conqueſt of it, perhaps from the Egyptians. This is thought to be the ſame city with that called Circeſium by the Greeks and Latins.

CARCINOMA, in *Medicine*; the ſame with CANCER. See MEDICINE and SURGERY *Index*.

CARD, among artificers, an inſtrument conſiſting of a block of wood, beſet with ſharp teeth, ſerving to arrange the hairs of wool, flax, hemp, and the like: there are different kinds of them, as hand-cards, ſtock-cards, &c. They are made as follows:

A piece of thick leather, of the ſize intended for the card, is ſtrained in a frame for that purpoſe; and then pricked full of holes, into which the teeth or pieces of iron wire are inſerted. After which the leather is nailed by the edges to a flat piece of wood, in the form of an oblong ſquare, about a foot in length and half a foot in breadth, with a handle placed in the middle of one of the longer ſides.

The teeth are made in the following manner. The wire being drawn of the ſize intended, a ſkain or number of wires are cut into proper lengths by means of a gauge, and then doubled in a tool contrived for that purpoſe: after which they are bent into the proper direction by means of another tool; and then placed in the leather, as mentioned above.

CARDS, among gameſters, little pieces of fine thin paſteboard of an oblong figure, of ſeveral ſizes; but moſt commonly in Britain, three inches and a half long and two and a half broad, on which are painted ſeveral points and figures.

The moulds and blocks for making cards are exactly like thoſe that were uſed for the firſt printed books. They lay a ſheet of wet or moiſt paper on the block, which is very ſlightly done over with a ſort of ink made of lamp-black diluted in water, and mixed with ſome ſtarch to give it a body. They afterwards rub it off with a round liſt. The court-cards are coloured by means of ſeveral patterns, ſtyled *ſtone-files*. Theſe conſiſt of papers cut through with a penknife; and in theſe apertures they apply ſeverally the various colours, as red, black, &c. Theſe patterns are painted with oil-colours, that the bruſhes may not wear them out; and when the pattern is laid on the paſteboard, they ſlightly paſs over it a bruſh full of colour, which, leaving it within the openings, forms the face or figure of the card.

Among ſharpers, divers ſorts of falſe and fraudulent cards have been contrived; as, 1. *Marked* cards, where the

Cards. the aces, kings, queens, knaves, are marked on the corners of the backs with ſpots of different number and order, either with clear water or water tinged with pale Indian ink, that thoſe in the ſecret may diſtinguiſh them. Aces are marked with ſingle ſpots on two corners oppoſite diagonally; kings with two ſpots at the ſame corners; knaves with the ſame number tranſverſed. 2. *Breef* cards, thoſe which are longer or broader than the reſt; chiefly uſed at whiſt and piquet. The broad cards are uſually for kings, queens, knaves, and aces; the long for the reſt. Their deſign is to direct the cuttings, to enable him in the ſecret to cut the cards diſadvantageouſly to his adverſary, and draw the perſon unacquainted with the fraud to cut them favourably for the ſharper. As the pack is placed either endwiſe or ſidewiſe to him that is to cut, the long or broad cards naturally lead him to cut to them. Breef cards are ſometimes made thus by the manufacturer; but, in defect of theſe, ſharpers pare all but the breefs with a penknife or razor. 3. *Corner bend*, denotes four cards turned down finely at one corner, to ſerve as a ſignal to cut by. 4. *Middle bend*, or Kingſton-bridge, is where the tricks are bent two different ways, which cauſes an opening or arch in the middle, to direct likewiſe the cutting.

Cards were invented about the year 1390, to divert Charles VI. of France, who had fallen into a melancholy diſpoſition. The inventor propoſed, by the figures of the four ſuits or colours, as the French call them, to repreſent the four claſſes of men in the kingdom. By the *cœurs* (hearts) are meant the *gens de choeur*, choir-men, or eccleſiaſtics; and therefore the Spaniards, who certainly received the uſe of cards from the French, have *copas*, or chalices, inſtead of hearts. The nobility, or prime military part of the kingdom, are repreſented by the ends or points of lances or pikes; and our ignorance of the meaning or the reſemblance of the figure induced us to call them *ſpades*: The Spaniards have *eſpadas*, ſwords, in lieu of pikes, which are of ſimilar import. By diamonds are deſigned the order of citizens, merchants, or tradeſmen, *carreaux*, (ſquare ſtones, tiles, or the like): The Spaniards have a coin, *dineros*, which anſwers to it; and the Dutch call the French word *carreaux* "*ſtreneen*," ſtones and diamonds, from the form. *Treſle*, the trefoil-leaf, or clover-graſs (corruptly called *clubs*), alludes to the huſbandmen and peaſants. But how this ſuit came to be called *clubs* is not eaſily explained; unleſs borrowing the game from the Spaniards, who have *baſtos* (ſtaves or clubs) inſtead of the trefoil, we give the Spaniſh ſignification to the French figure.

The hiſtory of the four kings, which the French, in drollery, ſometimes call the *cards*, are David, Alexander, Cæſar, and Charles; which names were then, and ſtill are on the French cards. Theſe reſpectable names repreſent the four celebrated monarchies of the Jews, Greeks, Romans, and Franks under Charlemagne. By the queens are intended Argine, Eſther, Judith, and Pallas (names retained in the French cards), typical of birth, piety, fortitude, and wiſdom, the qualifications reſiding in each perſon. *Argine* is an anagram for *regina*, queen by deſcent. By the knaves were deſigned the ſervants to knights (for *knave* originally meant only *ſervant*); but French pages and valets, now indiſcriminately uſed by various orders of perſons, were formerly only allowed to perſons of quality, eſquires (*eſcuires*), ſhield or armour bearers. Others fancy that the knights themſelves were deſigned by thoſe cards; becauſe Hogier and Lahire two names on the French cards, were famous knights at the time cards were ſuppoſed to have been invented.

Deceptions with Cards. See Legerdemain, ſect. i.

Cardamine || Cardan. CARDAMINE, in *Botany*: A genus of the ſiliquoſa order, belonging to the tetradynamia claſs of plants; and in the natural method ranking under the 39th order, *Siliquoſæ*. The ſiliqua parts aſunder with a ſpring, and the valves roll ſpirally backward; the ſtigma is entire, and the calyx a little gaping. Of this there are 15 ſpecies; but the moſt remarkable is the pratenſis, with a large purpliſh flower. This grows naturally in many parts of Britain, and is alſo called *cuckow flower*. There are four varieties, viz. the ſingle, with purple and white flowers, which are frequently intermixed in the meadows; and the double, of both colours. The ſingle ſorts are not admitted into gardens; but the double deſerve a place, as making a pretty appearance during the time they are in flower. They will thrive in a moiſt ſhady border; and are propagated by parting their roots, which is beſt performed in autumn. They delight in a ſoft loamy ſoil, not too ſtiff. By ſome the plant is reckoned antiſcorbutic.

CARDAMOM, in the *Materia Medica*. See Amomum.

CARDAN, Jerom, one of the moſt extraordinary geniuſes of his age, was born at Pavia on the 24th of September 1501. As his mother was not married, ſhe tried every method to procure an abortion, but without effect. She was three days in labour, and they were at laſt obliged to cut the child from her. He was born with his head covered with black curled hair. When he was four years old, he was carried to Milan; his father being an advocate in that city. At the age of 20, he went to ſtudy at the univerſity of that city; and two years afterwards he explained Euclid. In 1524, he went to Padua; and the ſame year he was admitted to the degree of maſter of arts: in the end of the following year, he took the degree of doctor of phyſic. He married about the year 1531. For ten years before, his impotency had hindered him from having knowledge of a woman; which was a great mortification to him. He attributed it to the evil influences of his planet under which he was born. When he enumerates, as he frequently does, the greateſt misfortunes of his life, this ten years impotency is always one. At the age of 32, he became profeſſor of mathematics at Milan. In 1539, he was admitted member of the college of phyſicians at Milan; in 1543, he read public lectures of medicine in that city, and at Pavia the year following; but diſcontinued them becauſe he could not get payment of his ſalary, and returned to Milan. In 1552, he went into Scotland, having been ſent for by the archbiſhop of St Andrew's, who had in vain applied to the French king's phyſicians, and afterwards to thoſe of the emperor of Germany. This prelate, then 40 years old, had for ten years been afflicted with a ſhortneſs of breath, which returned every eight days for the laſt two years. He began to recover from the moment that Cardan preſcribed for him. Cardan took his leave of him at the end of ſix weeks and

Cardan. and three days, leaving him prescriptions which in two years wrought a complete cure.

Cardan's journey to Scotland gave him an opportunity of visiting several countries. He crossed France in going thither; and returned through Germany, and the Low Countries, along the banks of the Rhine. It was on this occasion, he went to London, and calculated King Edward's nativity. This tour took up about four months: after which, coming back to Milan, he continued there till the beginning of October 1552; and then went to Pavia, from whence he was invited to Bologna in 1562. He taught in this last city till the year 1570; at which time he was thrown into prison; but some months after he was sent home to his own house. He left Bologna in 1571; and went to Rome, where he lived for some time without any public employment. He was however, admitted a member of the college of physicians, and received a pension from the pope. He died at Rome on the 21st of September 1575, according to Thuanus. This account might be sufficient to show the reader that Cardan was of a very fickle temper; but he will have a much better idea of his singular and odd turn of mind by examining what he himself has written concerning his own good and bad qualities. He paid himself congratulatory compliments for not having a friend in this world; but that in requittal, he was attended by an aerial spirit, emaned partly from Saturn and partly from Mercury, who was the constant guide of his actions, and teacher of every duty to which he was bound. He declared, too, that he was so irregular in his manner of walking the streets, as induced all beholders to point at him as a fool. Sometimes he walked very slowly, like a man absorbed in profound meditation; then all on a sudden quickened his steps, accompanying them with very absurd attitudes. In Bologna his delight was to be drawn about in a mean vehicle with three wheels. When nature did not visit him with any pain, he would procure to himself that disagreeable sensation by biting his lips so wantonly, or pulling his fingers to such a vehement degree, as sometimes to force the tears from his eyes: and the reason he assigned for so doing, was to moderate certain impetuous sallies of the mind, the violence of which was to him by far more insupportable than pain itself; and that the sure consequence of such a severe discipline was the enjoying the pleasure of health. He says elsewhere, that, in the greatest tortures of soul, he used to whip his legs with rods, and bit his left arm; that it was a great relief to him to weep, but that very often he could not; that nothing gave him more pleasure than to talk of things which made the whole company uneasy; that he spoke on all subjects, in season and out of season; and he was so fond of games of chance, as to spend whole days in them, to the great prejudice of his family and reputation, for he even staked his furniture and his wife's jewels.

Cardanus makes no scruple of owning that he was revengeful, envious, treacherous, a dealer in the black-art, a backbiter, a calumniator, and addicted to all the foul and detestable excesses that can be imagined: yet, notwithstanding (as one would think) so humbling a declaration, there was never perhaps a vainer mortal, or one that with less ceremony expressed the high opinion he had of himself, than Cardanus was known to do, as will appear by the following proofs, "I have been admired by many nations: an infinite number of panegyrics, both in prose and verse, have been composed to celebrate my fame. I was born to release the world from the manifold errors under which it groaned. What I have found out could not be discovered either by my predecessors or my cotemporaries; and that is the reason why those authors who write any thing worthy of being remembered, scruple not to own that they are indebted to me for it. I have composed a book on the dialectic art, in which there is neither one superfluous letter nor one deficient. I finished it in seven days, which seems a prodigy. Yet where is there a person to be found, that can boast of his having become master of its doctrine in a year? And he that shall have comprehended it in that time, must appear to have been instructed by a familiar dæmon." Cardan, Cardass.

The same capriciousness observable in his outward conduct is to be observed in the composition of his works. We have a multitude of his treatises in which the reader is stopped almost every moment by the obscurity of his text, or his digressions from the point in hand. In his arithmetical performances there are several discourses on the motions of the planets, on the creation, and on the tower of Babel. In his dialectic work, we find his judgment on the historians and the writers of epistles. The only apology which he makes for the frequency of his digressions is, that they were purposely done for the sooner filling up of his sheet, his bargain with the bookseller being at so much per sheet; and that he worked as much for his daily support as for the acquisition of glory. The Lyons edition of his works, printed in 1663, consists of ten volumes in folio.

It was Cardanus who revived in latter times all the secret philosophy of the Cabbala or Cabbalists, which filled the world with spirits; a likeness to whom, he asserted, we might attain by purifying ourselves with philosophy. He chose for himself, however, notwithstanding such reveries, this fine device, *Tempus mea possessio, tempus meus ager*: "Time is my sole possession, and the only fund I have to improve."

In fact, when we consider the transcendent qualities of Cardan's mind, we cannot deny his having cultivated it with every species of knowledge, and his having made a greater progress in philosophy, in the medical art, in astronomy, in mathematics, &c. than the greatest part of his cotemporaries who had applied their minds but to one of those sciences.

Scaliger affirms, that Cardan, having fixed the time of his death, abstained from food, that this prediction might be fulfilled, and that his continuance to live might not discredit his art. Cardan's father, who was a doctor of medicine, and a professor of civil and canon law, died in the same manner in the year 1524, having abstained from all sustenance for nine days. His son tells us, that he had white eyes, and could see in the night-time.

CARDASS, a sort of card proper for carding flocks of silk, to make cappadine of it. It is also the name which the French give to those flocks of silk.

CARDASSES, is also the name which, in the cloth manufactories of Languedoc, they give to a sort of large card, which is used for carding the dyed wool, designed for making cloth of mixed colours.

CARDERS,

Carders || Cardigan.

CARDERS, in the woollen manufactory, are perſons who prepare wool, &c. for ſpinning, &c.

Carders, ſpinners, weavers, fullers, ſheermen, and dyers, not performing their duty in their occupations, ſhall yield to the party grieved double damages; to be committed until payment. One juſtice to hear and determine complaints.

Carders, combers, ſorters, ſpinners, or weavers, conveying away, embezzling, or detaining any wool or yarn, delivered by the clothier, or any other perſon, ſhall give the party grieved ſuch ſatisfaction, as two juſtices, mayor, &c. ſhall think fit: if not able or willing to make ſatisfaction, for the firſt offence to be whipped, or ſet in the ſtocks in ſome market-town, or in any other town where the offence is committed: the ſecond offence to incur the like, or ſuch further puniſhment by whipping, &c. as juſtices ſhall think proper. Conviction by one witneſs on oath, or confeſſion.

CARDI, Ludovico. See Civoli.

CARDIAC, in a general ſenſe, ſignifies all medicines beneficial to the heart, whether internally or externally applied. The word comes from the Greek word καρδια, *cor*; the heart being reputed the immediate ſeat of their operation.

Cardiacs, in a more particular ſenſe, denote medicines which raiſe the ſpirits and give preſent ſtrength and cheerfulneſs; theſe amount to the ſame with what are properly called *cordials*. Cardiacs are medicines anciently ſuppoſed to exert themſelves immediately in comforting and ſtrengthening the heart: but the modern phyſicians rather ſuppoſe them to produce the effect by putting the blood into a gentle fermentation, whereby the ſprings, before decayed, are repaired and invigorated, and the tone and elaſticity of the fibres of the veſſels reſtored; the conſequence of which is a more eaſy and briſk circulation.

CARDIALGIA, in *Medicine*, a violent ſenſation of heat or acrimony felt towards the upper or left orifice of the ſtomach, though ſeemingly at the heart; ſometimes accompanied with palpitations of the heart, fainting, and a propenſity to vomit: better known by the name of *cardiac paſſion*, or *heart-burn*. See Medicine *Index*.

CARDIFF, a town of Glamorganſhire, in South Wales, ſeated on the river Tave, in a rich and fruitful ſoil. It is a large, compact, well built town, having a caſtle, a wall, and four gates, built by Robert Fitz-Hamon, a Norman, about the year 1100. It is governed by the conſtable of the caſtle, 12 aldermen, 12 burgeſſes, &c. and ſends one member to parliament. Here the aſſizes and ſeſſions are held, beſides ſeveral courts. There is a handſome bridge over the river, to which ſmall veſſels come to take in their lading. It has now only one church; St Mary's having been long ſince thrown down by the undermining of the river. The caſtle, though much decayed, makes a grand appearance even at this time; and the walls of the town are very ſtrong and thick. The church has a fine tower-ſteeple, and the town-hall is a good ſtructure. The magiſtrates are elected every year by the majority of the burgeſſes. W. Long. 3. 20. N. Lat. 51. 30. Cardiff gives title of Britiſh Baron to the family of Bute in Scotland.

CARDIGAN, the capital town of Cardiganſhire, in South Wales, is ſeated near the mouth of the river Teivy, on the Iriſh channel. It is indifferently large and well-built, containing three wards, one church, and the county-goal. It is governed by a mayor, 13 aldermen, 13 common-council men, &c. Here are the ruins of a caſtle which was built by Gilbert de Clare, about the year 1160. It ſends one member to parliament; and has two markets, held on Tueſdays and Saturdays. W. Long. 4. 38. N. Lat. 52. 15.

Cardiganſhire || Cardinal.

CARDIGANSHIRE, a county of South Wales, bounded on the north by Merionethſhire and Montgomeryſhire, on the eaſt by Radnorſhire and Brecknockſhire, on the weſt by the Iriſh ſea, and on the ſouth by Caermarthenſhire. Its length from north-weſt to ſouth-eaſt is about 44 miles, and its breadth near 20. The air, as in other parts of Wales, varies with the ſoil, which in the ſouthern and weſtern parts is more upon a level than this principality generally is, which renders the air mild and temperate. But as the northern and eaſtern parts are mountainous, they are conſequently more barren and bleak. However, there are cattle bred in all parts; but they have neither wood nor coals of their own for fuel: they have rich lead mines, and fiſh in plenty, with fowls both tame and wild. The principal rivers are the Teivy, the Ridol, and the Iſtwith. This county hath five market-towns, viz. Cardigan, Aberiſtwith, Llanbadarnvawn, Llanbedar, and Tregaron, with 77 pariſhes; and was formerly computed to have upward of 3000 houſes, and 520,000 acres of land. It ſends two members to parliament; one for the county, and one for Cardigan.

CARDINAL, in a general ſenſe, an appellation given to things on account of their pre-eminence. The word is formed of the Latin *cardo*, *a hinge*; it being on theſe fundamental points that all the reſt of the ſame kind are ſuppoſed to turn. Thus, juſtice, prudence, temperance, and fortitude, are called the four *cardinal virtues*, as being the baſis of all the reſt.

Cardinal *Flower*. See Lobelia, Botany *Index*.

Cardinal *Points*, in *Coſmography*, are the four interſections of the horizon with the meridian, and the prime vertical circle. Of theſe, two, viz. the interſections of the horizon and meridian, are called *North* and *South*, with regard to the poles they are directed to. The other two, viz. the interſections of the horizon and firſt vertical, are called *Eaſt* and *Weſt*.

The cardinal points, therefore, coincide with the four cardinal regions of the heavens; and are 90° diſtant from each other. The intermediate points are called *collateral points*.

Cardinal *Points*, in *Aſtrology*, are the riſing and ſetting of the ſun, the zenith, and nadir.

Cardinal *Signs*, in *Aſtronomy*, are Aries, Libra, Cancer, and Capricorn.

Cardinal *Winds* are thoſe that blow from the cardinal points.

Cardinal *Numbers*, in *Grammar*, are the numbers one, two, three, &c. which are indeclinable; in oppoſition to the ordinal numbers, firſt, ſecond, third, fourth, &c.

Cardinal, an eccleſiaſtical prince in the Romiſh church, being one who has a voice in the conclave at the election of a pope. Some ſay the cardinals were ſo called from the Latin *incardinatio*, which ſignifies

Cardinal. the adoption in any church made of a prieſt of a foreign church, driven thence by misfortune; and add, that the uſe of the word commenced at Rome and Ravenna; the revenues of the churches of which cities being very great, they became the common refuge of the unhappy prieſts of all other churches.

The cardinals compoſe the pope's council or ſenate: in the Vatican is a conſtitution of Pope John, which regulates the rights and titles of the *cardinals;* and which declares, that as the pope repreſents Moſes, ſo the cardinals repreſent the ſeventy elders, who, under the pontifical authority, decide private and particular differences.

Cardinals, in their firſt inſtitution, were only the principal prieſts, or incumbents of the pariſhes of Rome. In the primitive church, the chief prieſt of a pariſh, who immediately followed the biſhop, was called *preſbyter cardinalis*, to diſtinguiſh him from the other petty prieſts, who had no church nor preferment; the term was firſt applied to them in the year 150; others ſay, under Pope Silveſter, in the year 300. Theſe cardinal prieſts were alone allowed to baptize, and adminiſter the euchariſt. When the cardinal prieſts became biſhops, their cardinalate became vacant; they being then ſuppoſed to be raiſed to a higher dignity.—Under Pope Gregory, cardinal prieſts, and cardinal deacons, were only ſuch prieſts and deacons as had a church or chapel under their particular care: and this was the original uſe of the word. Leo IV. in the council of Rome, held in 853, calls them *preſbyteros ſui cardinis;* and their churches, *parochias cardinales*.

The cardinals continued on this footing till the eleventh century: but as the grandeur and ſtate of his holineſs became then exceedingly augmented, he would have his council of cardinals make a better figure than the ancient prieſts had done. It is true, they ſtill preſerved their ancient title; but the thing expreſſed by it was no more. It was a good while, however, before they had the precedence over biſhops, or got the election of the pope into their hands: but when they were once poſſeſſed of thoſe privileges, they ſoon had the red hat and purple; and growing ſtill in authority, they became at length ſuperior to the biſhops, by the ſole quality of being cardinals.

Du Cange obſerves, that originally there were three kinds of churches: the firſt or genuine churches were properly called *pariſhes;* the ſecond *deaconries*, which were chapels joined to hoſpitals, and ſerved by deacons; the third were ſimple *oratories*, where private maſſes were ſaid, and were diſcharged by local and reſident chaplains. He adds, that to diſtinguiſh the principal or pariſh churches from the chapels and oratories, the name *cardinales* was given to them. Accordingly, pariſh churches gave titles to cardinal prieſts; and ſome chapels alſo, at length, gave the title of *cardinal deacons*.

Others obſerve, that the term *cardinal* was given not only to prieſts, but alſo to biſhops and deacons who were attached to certain churches, to diſtinguſh them from thoſe who only ſerved them *en paſſant*, and by commiſſion. Titular churches, or benefices, were a kind of pariſhes, i. e. churches, aſſigned each to a cardinal prieſt; with ſome ſtated diſtrict depending on it, and a font for adminiſtering of baptiſm, in caſes where the biſhop himſelf could not adminiſter it. Theſe cardinals were ſubordinate to the biſhops; and accordingly, in councils, particularly that held at Rome in 868, ſubſcribed after them. Cardinal.

It was not, however, only at Rome, that prieſts bore this name; for we find there were cardinal prieſts in France: thus, the curate of the pariſh of St John de Vignes is called in old charters the *cardinal prieſt* of that pariſh.

The title of *cardinal* is alſo given to ſome biſhops, *quatenus* biſhops; e. g. to thoſe of Mentz and Milan: the archbiſhop of Bourges is alſo, in ancient writings, called *cardinal;* and the church of Bourges, a *cardinal church*. The abbot of Vendome calls himſelf *cardinalis natus*.

The cardinals are divided into three claſſes or orders; containing ſix biſhops, fifty prieſts, and fourteen deacons; making in all ſeventy: which conſtitute what they call the *ſacred college*. The cardinal biſhops, who are, as it were, the pope's vicars, bear the titles of the biſhopricks aſſigned to them; the reſt take ſuch titles as are given them: the number of cardinal biſhops has been fixed; but that of cardinal prieſts and deacons, and conſequently the ſacred college itſelf, is always fluctuating. Till the year 1125, the college only conſiſted of fifty-two or fifty-three: the council of Conſtance reduced them to twenty-four; but Sixtus IV. without any regard to that reſtriction, raiſed them again to fifty-three, and Leo to ſixty-five. Thus, as the number of cardinal prieſts was anciently fixed to twenty-eight, new titles were to be eſtabliſhed, in proportion as new cardinals were created. As for the cardinal deacons, they were originally no more than ſeven for the fourteen quarters of Rome; but they were afterwards increaſed to nineteen, and after that were again diminiſhed.

Accordingly to Onuphrius, it was Pope Pius IV. who firſt enacted, in 1562, that of the pope ſhould be choſen only by the ſenate of cardinals; whereas, till that time, the election was by all the clergy of Rome. Some ſay, the election of the pope reſted in the cardinals, excluſive of the clergy, in the time of Alexander III. in 1160. Others go higher ſtill, and ſay, that Nicholas II. having been elected at Sienna, in 1058, by the cardinals alone, occaſioned the right of election to be taken from the clergy and people of Rome; only leaving them that of confirming him by their conſent; which was at length, however, taken from them. See his decree for this purpoſe, iſſued in the Roman council of 1059, in Hardouin's Acta Conciliorum, tom. vi. pt. i. p. 1165. Whence it appears, that the cardinals who had the right of ſuffrage in the election of his ſucceſſors, were divivided by this pontiff into *cardinal biſhops* and *cardinal clerks:* meaning by the former the ſeven biſhops who belonged to the city and territory of Rome; and by the latter, the *cardinal preſbyters*, or miniſters of the twenty-eight Roman pariſhes, or principal churches. To theſe were added, in proceſs of time, under Alexander III. and other pontiffs, new members, in order to appeaſe the tumults occaſioned by the edict of Nicholas II.

At the creation of a new cardinal, the pope performs the ceremony of opening and ſhutting his mouth; which is done in a private conſiſtory. The ſhutting his mouth implies the depriving him of the liberty of giving his opinion in congregations; and the opening his

Cardinal || Career.

his mouth, which is performed 15 days after, ſignifies the taking off his reſtraint. However, if the pope happens to die during the time a cardinal's mouth is ſhut, he can neither give his voice in the election of a new pope, nor be himſelf advanced to that dignity.

The dreſs of a cardinal is a red ſoutanne, a rocket, a ſhort purple mantle, and a red hat.

The cardinals began to wear the red hat at the council of Lyons, in 1243. The decree of Pope Urban VIII. whereby it is appointed, that the cardinals be addreſſed under the title of *eminence*, is of the year 1630; till then, they were called *illuſtriſſimi*.

When cardinals are ſent to the courts of princes, it is in quality of legates *à latere;* and when they are appointed governors of towns, their government is called by the name of *legation*.

CARDINAL has alſo been applied to ſecular officers. Thus, the prime miniſters in the court of the emperor Theodoſius, are called *cardinales*. Caſſiodorus, lib. vii. formul. 31. makes mention of the cardinal prince of the city of Rome; and in the liſt of officers of the duke of Bretagne, in 1447, we meet with one Raoul de Thorel, cardinal of Quillart, chancellor, and ſervant of the viſcount de Rohan: which ſhows it to have been an inferior quality.

CARDIOID, in the higher geometry, an algebraical curve, ſo called from its reſemblance to a heart.

CARDIOSPERMUM. See BOTANY *Index*.

CARDIUM, or COCKLE, in *Zoology*, a genus of inſects belonging to the order of *vermes teſtacea*. The ſhell conſiſts of two equal valves, and the ſides are equal. There are 21 ſpecies of this genus. Common on all ſandy coaſts, lodged a little beneath the ſand; their place is marked by a depreſſed ſpot. They are wholeſome and delicious food.

CARDONA, a handſome town of Spain, in Catalonia, with a ſtrong caſtle, and the title of a duchy. Near it is an inexhauſtible mountain of ſalt of ſeveral colours, as red, white, carnation, and green: but when waſhed, it becomes white. There are alſo vineyards which produce excellent wine, and very lofty pine-trees. It is ſeated on an eminence, near the river Cardenero. E. Long. 1. 26. N. Lat. 41. 42.

CARDUUS. See BOTANY *Index*.

CARDUUS Benedictus, Bleſſed thiſtle. See CNICUS, BOTANY *Index*.

CAREENING, in the ſea-language, the bringing a ſhip to lie down on one ſide, in order to trim and caulk the other ſide.

A ſhip is ſaid to be brought to the careen, when, the moſt of her lading being taken out, ſhe is hulled down on one ſide, by a ſmall veſſel, as low as neceſſary; and there kept by the weight of the ballaſt, ordnance, &c. as well as by ropes, leſt her maſts ſhould be ſtrained too much; in order that her ſides and bottom may be trimmed, ſeams caulked, or any thing that is faulty under water mended. Hence, when a ſhip lies on one ſide when ſhe ſails, ſhe is ſaid to ſail on the careen.

CAREER, in the *Manege*, a place incloſed with a barrier, wherein they run the ring.

The word is alſo uſed for the race or courſe of the horſe itſelf, provided it do not exceed 200 paces.

In the ancient circus, the career was the ſpace the bigæ, or quadrigæ, were to run at full ſpeed, to gain the prize. See CIRCUS.

CAREER, in *Falconry*, is a flight or tour of the bird, about 120 yards. If ſhe mount more, it is called a *double career;* if leſs, a *ſemi-career*.

Career || Carew.

CARELIA, the eaſtern province of Finland; divided into Swediſh Carelia, and Muſcovite Carelia. The capital of the latter is Povenza, and of the former Weiburg.

CARELSCROON, a ſea-port town of Sweden, in Blekingia, or Bleking, on the Baltic ſea, with a very good harbour defended by two forts. It was built in 1679; and is very populous, with arſenals for the marine: the houſe of the director-general of the admiralty is in this town, and here the Swedes lay up their royal navy. E. Long. 15. 5. N. Lat. 56. 15.

CARENTAN, a town of France in Lower Normandy, and in the Contentin, with an ancient caſtle. W. Long. 1. 14. N. Lat. 49. 20.

CARET, among grammarians, a character marked thus ʌ, ſignifying that ſomething is added on the margin, or interlined, which ought to come in where the caret ſtands.

CAREW, GEORGE, born in Devonſhire in 1557, an eminent commander in Ireland, was made preſident of Munſter by Queen Elizabeth; when, joining his forces with the earl of Thomond, he reduced the Iriſh inſurgents, and brought the earl of Deſmond to his trial. King James made him governor of Guernſey, and created him a baron. As he was a valiant commander, he was no leſs a polite ſcholar; and wrote *Paccata Hibernia*, a hiſtory of the late wars in Ireland, printed after his death, in 1633. He made ſeveral collections for a hiſtory of Henry V. which are digeſted into Speed's Hiſtory of Great Britain. Beſides theſe, he collected materials of Iriſh hiſtory in four large MSS. volumes, now in the Bodleian library, Oxford.

CAREW, *Thomas*, deſcended from the family of Carew in Glouceſterſhire, was gentleman of the privy chamber to Charles I. who always eſteemed him one of the moſt celebrated wits of his court. He was much reſpected by the poets of his time, particularly by Ben Johnſon and Sir William Davenant; and left behind him ſeveral poems, and a maſque called *Cœlum Britannicum*, performed at Whitehall on Shrove Tueſday night, 1633, by the king, and ſeveral of his nobles with their ſons. Carew was aſſiſted in the contrivance by Inigo Jones, and the muſic was ſet by Mr Henry Lawes of the king's chapel. He died in the prime of life, about the year 1639.

CAREW, *Richard*, author of the "Survey of Cornwall," was the eldeſt ſon of Thomas Carew of Eaſt Anthony, and was born in 1555. When very young, he became a gentleman commoner of Chriſt-church college, Oxford; and at 14 years of age had the honour of diſputing, extempore, with the afterwards famous Sir Philip Sydney, in the preſence of the earls of Leiceſter, Warwick, and other nobility. After ſpending three years at the univerſity, he removed to the Middle Temple, where he reſided the ſame length of time, and then travelled into foreign parts. Not long after his return to England, he married, in 1577, Juliana Arundel, of Trerice. In 1581, Mr Carew was made juſtice of the peace, and in 1586 was appointed high ſheriff of the county of Cornwall; about which time he was likewiſe queen's deputy for the militia.

Carew. In 1589, he was elected a member of the college of Antiquaries, a diſtinction to which he was entitled by his literary abilities and purſuits. What particularly engaged his attention was his native county, his "Survey" of which was publiſhed, in 4to, at London, in 1602. It hath been twice reprinted, firſt in 1723, and next in 1769. Of this work Camden hath ſpoken in high terms, and acknowledges his obligations to the author. In the preſent improved ſtate of topographical knowledge, and ſince Dr Borlaſe's excellent publications relative to the county of Cornwall, the value of Carew's "Survey" muſt have been greatly diminiſhed. Mr Gough remarks, that the hiſtory and monuments of this county were faintly touched by Carew; but it is added, that he was a perſon extremely capable of deſcribing them, if the infancy of thoſe ſtudies at that time had afforded light and materials. Another work of our author was a tranſlation from the Italian, entitled, "The examination of Men's Wits. In which, by diſcovering the variety of natures, is ſhowed for what profeſſion each one is apt, and how far he ſhall profit therein." This was publiſhed at London in 1594, and afterwards in 1604; and though Richard Carew's name is prefixed to it, hath been principally aſcribed by ſome perſons to his father. According to Wood, Carew wrote alſo, "The true and ready Way to learn the Latin Tongue," in anſwer to a query, whether the ordinary method of teaching the Latin by the rules of grammar be the beſt mode of inſtructing youths in that language? This tract is involved in Mr Hartlib's book upon the ſame ſubject, and with the ſame title. It is certain that Carew was a gentleman of conſiderable abilities and literature, and that he was held in great eſtimation by ſome of the moſt eminent ſcholars of his time. He was particularly intimate with Sir Henry Spelman, who extols him for his ingenuity, virtue, and learning.

Carew, *George*, brother to the ſubject of the laſt article, was educated in the univerſity of Oxford, after which he ſtudied the law in the inns of court, and then travelled to foreign countries for farther improvement. On his return to his native country, he was called to the bar, and after ſome time was appointed ſecretary to Sir Chriſtopher Hatton, lord chancellor of England. This was by the ſpecial recommendation of Queen Elizabeth herſelf, who gave him a prothonotaryſhip in the chancery, and conferred upon him the honour of knighthood. In 1597, Sir George Carew, who was then a maſter in chancery, was ſent ambaſſador to the king of Poland. In the next reign, he was one of the commiſſioners for treating with the Scotch concerning an union between the two kingdoms; after which he was appointed ambaſſador to the court of France, where he continued from the latter end of the year 1605 till 1609. During his reſidence in that country, he formed an intimacy with Thuanus, to whom he communicated an account of the tranſactions in Poland whilſt he was employed there, which was of great ſervice to that admirable author in drawing up the 121ſt book of his hiſtory. After Sir George Carew's return from France, he was advanced to the important poſt of maſter of the court of wards, which honourable ſituation he did not long live to enjoy; for it appears from a letter written by Thuanus to Camden in the ſpring 1613, that he was then lately deceaſed. Sir George Carew married Thomaſine, daughter of Sir Francis Godolphin, great grandfather of the lord treaſurer Godolphin, and had by her two ſons and three daughters. When Sir George Carew returned, in 1609, from his French embaſſy, he drew up, and addreſſed to James I. "A Relation of the State of France, with the characters of Henry IV. and the principal perſons of that Court." The characters are drawn from perſonal knowledge and cloſe obſervation, and might be of ſervice to a general hiſtorian of that period. The compoſition is perſpicuous and manly, and entirely free from the pedantry which prevailed in the reign of James I. but this is the leſs ſurpriſing, as Sir George Carew's taſte had been formed in a better æra, that of Queen Elizabeth. The valuable tract we are ſpeaking of lay for a long time in MS. till happily falling into the hands of the earl of Hardwicke, it was communicated by him to Dr Birch, who publiſhed it, in 1749, at the end of his "Hiſtorical View of the Negotiations between the Courts of England, France, and Bruſſels, from 1592 to 1617." That intelligent and induſtrious writer juſtly obſerves, that it is a model upon which ambaſſadors may form and digeſt their notions and repreſentations; and the late celebrated poet Mr Gray hath ſpoken of it as an excellent performance.

Carex, Carey.

CAREX, SEDGE-GRASS. See BOTANY *Index*.

CAREY, HARRY, a man diſtinguiſhed by both poetry and muſic, but perhaps more ſo by a certain facetiouſneſs, which made him agreeable to every body. He publiſhed in 1720 a little collection of poems; and in 1732, ſix cantatas, written and compoſed by himſelf. He alſo compoſed ſundry ſongs for modern comedies, particularly thoſe in the "Provoked Huſband:" he wrote a farce called "The Contrivances." in which were ſeveral little ſongs to very pretty airs of his own compoſition: he alſo made two or three little dramas for Goodman's-fields theatre, which were very favourably received. In 1729, he publiſhed by ſubſcription his poems much enlarged: with the addition of one entitled "Namby Pamby," in which Ambroſe Philips is ridiculed. Carey's talent, ſays his hiſtorian, lay in humour and unmalevolent ſatire: to ridicule the rant and bombaſt of modern tragedies he wrote one, to which he gave the ſtrange title of "Chrononhotonthologos," acted in 1734. He alſo wrote a farce called "The Honeſt Yorkſhireman." Carey was a thorough Engliſhman, and had an unſurmountable averſion to the Italian opera and the ſingers in it: he wrote a burleſque opera on the ſubject of the "Dragon of Wantley; and afterwards a ſequel to it, entitled, "The Dragoneſs;" both which were eſteemed a true burleſque upon the Italian opera. His qualities being of the entertaining kind, he was led into more expences than his finances could bear, and thus was frequently in diſtreſs. His friends, however, were always ready to aſſiſt him by their little ſubſcriptions to his works: and encouraged by theſe, he republiſhed, in 1740, all the ſongs he had ever compoſed, in a collection, entitled, "The Muſical Century, in 100 Engliſh Ballads, &c." and, in 1743, his dramatic works, in a ſmall volume, 4to. With all his mirth and good humour, he ſeems to have been at times deeply affected with the malevolence of ſome of his own profeſſion, who, for reaſons that no one can gueſs at, were

Carganors || Caribbee.

were his enemies; and this, with the preſſure of his circumſtances, is ſuppoſed to have occaſioned his untimely end; for, about 1744, in a fit of deſperation, he laid violent hands on himſelf, and, at his houſe in Warner-ſtreet, Cold-bath Fields, put a period to a life, which, ſays Sir John Hawkins, had been led without reproach. It is to be noted, and it is ſomewhat ſingular in ſuch a character, that in all his ſongs and poems on wine, love, and ſuch kind of ſubjects, he ſeems to have manifeſted an inviolable regard for decency and good manners.

CARGADORS, a name which the Dutch give to thoſe brokers whoſe buſineſs is to find freight for ſhips outward bound, and to give notice to the merchants, who have commodities to ſend by ſea, of the ſhips that are ready to ſail, and of the places for which they are bound.

CARGAPOL, or KARGAPOL, the capital of a territory of the ſame name, in the province of Dwina, in Muſcovy. E. Long. 36°. N. Lat. 63°.

CARGO denotes all the merchandiſes and effects which are laden on board a ſhip.

Super-CARGO, a perſon employed by merchants to go a voyage, overſee the cargo, and diſpoſe of it to the beſt advantage.

CARIA, in *Ancient Geography*, a country of the Hither Aſia; whoſe limits are extended by ſome, while they are contracted by others. Mela and Pliny extend the maritime Caria from Jaſus and Halicarnaſſus, to Calynda, and the borders of Lycia. The inland Caria Ptolemy extends to the Meander and beyond. *Car*, *Cariates*, *Cariatis*, *Cariſſa*, and *Caris*, and *Caira*, are the gentilitious names; *Carius* and *Caricus* the epithets. *In Care periculum*, was a proverbial ſaying on a thing expoſed to danger, but of no great value. The *Cares* being the Swiſs of thoſe days, were hired and placed in the front of the battle, (Cicero.) *Cum Care Cariſſa*, denoted the behaviour of clowns. The Cares came originally from the iſlands to the continent, being formerly ſubject to Minos, and called *Leleges:* this the Cretans affirm, and the Cares deny, making themſelves aborigines. They are of a common original with the Myſi and Lydi, having a common temple, of a very ancient ſtanding, at Melaſſa, a town of Caria, called *Jovis Carii Delubrum*, (Herodotus.) Homer calls the Carians, barbarians in language.

CARIATI, a town of Italy, in the kingdom of Naples, and province of Hither Calabria, with a biſhop's ſee, and the title of a principality. It is two miles from the gulf of Taranto, and 37 north-eaſt of Coſenza. E. Long. 17. 19. N. Lat. 30. 38.

CARIBBEE ISLANDS, a cluſter of iſlands ſituated in the Atlantic ocean between 59 and 63 degrees of weſt longitude, and between 11 and 18 degrees of north latitude. They lie in the form of a bow or ſemicircle, ſtretching almoſt from the coaſt of Florida north, to near the river Oroonoque. Thoſe that lie neareſt the eaſt have been called the *Windward Iſlands*, the others the *Leeward*, on account of the winds blowing generally from the eaſtern point in thoſe quarters. Abbé Raynal conjectures them to be the tops of very high mountains formerly belonging to the continent, which have been changed into iſlands by ſome revolution that has laid the flat country under water. The direction of the Caribbee iſlands, beginning from Tobago, is nearly north and N. N. W. This direction is continued, forming a line ſomewhat curved towards the north-weſt, and ending at Antigua. In this place the line becomes at once curved; and extending itſelf in a ſtraight direction to the weſt and north-weſt, meets in its courſe with Porto-Rico, St Domingo, and Cuba, known by the name of the *Leeward Iſlands*, which are ſeparated from each other by channels of various breadths. Some of theſe are 6, others 15 or 20 leagues broad; but in all of them the ſoundings are from 100 to 120 or 150 fathoms. Between Grenada and St Vincent's there is alſo a ſmall archipelago of 30 leagues, in which the ſoundings are not above ten fathoms. The mountains in the Caribbee iſlands run in the ſame direction as the iſlands themſelves. The direction is ſo regular, that if we were to conſider the tops of theſe mountains only, independent of their baſes, they might be looked upon as a chain of hills belonging to the continent, of which Martinico would be the moſt north-weſterly promontory. The ſprings of water which flow from the mountains in the Windward iſlands, run all in the weſtern parts of theſe iſlands. The whole eaſtern coaſt is without any running water. No ſprings come down there from the mountains: and indeed they would have there been uſeleſs; for after having run over a very ſhort tract of land, and with great rapidity, they would have fallen into the ſea. In Porto Rico, St Domingo, and Cuba, there are a few rivers that diſcharge themſelves on the northern ſide, and whoſe ſources riſe in the mountains running from eaſt to weſt, that is, through the whole length of theſe iſlands. From the other ſide of the mountains facing the ſouth, where the ſea, flowing with great impetuoſity, leaves behind it marks of its inundations, ſeveral rivers flow down, the mouths of which are capable of receiving the largeſt ſhips. The ſoil of the Caribbees conſiſts moſtly of a layer of clay or gravel of different thickneſs: under which is a bed of ſtone or rock. The nature of ſome of thoſe ſoils is better adapted to vegetables than others. In thoſe places where the clay is drier and more friable, and mixes with the leaves and remains of plants, a layer of earth is formed of greater depth than where the clay is moiſter. The ſand or gravel has different properties according to its peculiar nature; wherever it is leſs hard, leſs compact, and leſs porous, ſmall pieces ſeparate themſelves from it, which, though dry, preſerve a certain degree of coolneſs uſeful to vegetation. This ſoil is called in America a *pumice-ſtone* ſoil. Wherever the clay and gravel do not go through ſuch modifications, the ſoil becomes barren, as ſoon as the layer formed by the decompoſition of the original plants is deſtroyed.—By a treaty concluded in January 1660, between the French and Engliſh, the Caribs were confined to the iſlands of St Vincent's and Dominica, where all the ſcattered body of this people were united, and at that time did not exceed in number 6000 men. See ST VINCENT'S and DOMINICA.

Caribbee.

As the Caribbee iſlands are all between the tropics, their inhabitants are expoſed, allowing for the varieties reſulting from difference of ſituation and ſoil, to a perpetual heat, which generally increaſes from the riſing of the ſun till an hour after noon, and then declines in proportion as the ſun declines. The variations of the temperature of the air ſeem to depend rather on the wind than on the changes of the ſeaſons. In thoſe

places

Caribbee Islands.

places where the wind does not blow, the air is exceſſively hot, and none but the eaſterly winds contribute to temper and refreſh it: thoſe that blow from the ſouth and weſt afford little relief; but they are much leſs frequent and leſs regular than that which blows from the eaſt. The branches of the trees expoſed to the influence of the latter are forced round towards the weſt: but their roots are ſtronger, and more extended under the ground, towards the eaſt than towards the weſt; and hence they are eaſily thrown down by ſtrong weſt winds or hurricanes from that quarter. The eaſterly wind is ſcarce felt in the Caribbee iſlands before nine or ten o'clock in the morning, increaſes in proportion as the ſun riſes above the horizon, and decreaſes as it declines. Towards the evening it ceaſes entirely to blow on the coaſts, but not on the open ſea. It has alſo been obſerved, that it blows with more force and more regularity in the dog-days than at any other time of year.

The rain alſo contributes to the temperature of the Caribbee iſlands, though not equally in them all. In thoſe places where the eaſterly wind meets with nothing to oppoſe its progreſs, it diſpels the clouds as they begin to riſe, and cauſes them to break either in the woods or upon the mountains. But whenever the ſtorms are too violent, or the blowing of the eaſterly wind is interrupted by the changeable and temporary effect of the ſoutherly or weſterly ones, it then begins to rain. In the other Caribbee iſlands, where this wind does not generally blow, the rains are ſo frequent and plentiful, eſpecially in the winter ſeaſon, which laſts from the middle of July to the middle of October, that, according to the moſt accurate obſervations, as much rain falls in one week as in our climates in a year. Inſtead of thoſe mild refreſhing ſhowers which fall in the European climates, the rains of the Caribbee iſlands are torrents, the ſound of which might be miſtaken for hail, were not that almoſt totally unknown under ſo burning a ſky. Theſe ſhowers indeed refreſh the air; but they occaſion a dampneſs, the effects of which are not leſs diſagreeable than fatal. The dead muſt be interred within a few hours after they have expired. Meat will not keep ſweet above 24 hours. The fruits decay, whether they are gathered ripe or before their maturity. The bread muſt be made up into biſcuits, to prevent its growing mouldy. Common wines turn ſour, and iron turns ruſty, in a day's time. The ſeeds can only be preſerved by conſtant attention and care, till the proper ſeaſon returns for ſowing them. When the Caribbee iſlands were firſt diſcovered, the corn that was conveyed there for the ſupport of the Europeans, was ſo ſoon damaged that it became neceſſary to ſend it out in the ears. This neceſſary precaution ſo much enhanced the price of it, that few were able to purchaſe it. Flour was then ſubſtituted in lieu of corn; which lowered indeed the expences of tranſport, but had this inconvenience, that it was ſooner damaged. It was imagined by a merchant, that if the flour were entirely ſeparated from the bran, it would have the double advantage of being cheaper and keeping longer. He cauſed it therefore to be ſifted, and put the fineſt flour into ſtrong caſks, and beat it cloſe together with iron hammers, till it became ſo cloſe a body that the air could ſcarcely penetrate it. This method was found to anſwer the purpoſe; and if, by it, the flour cannot be preſerved as long as in our dry and temperate climates, it may be kept for ſix months, a year, or longer, according to the degree of care taken in the preparation. Caribbiana ‖ Carignan.

However troubleſome theſe effects of the rain may be, it is attended with ſome others ſtill more formidable; namely, frequent and dreadful earthquakes.—Theſe happening generally during the time or towards the end of the rainy ſeaſon, and when the tides are higheſt, ſome ingenious naturaliſts have ſuppoſed that there might be a connexion between them. The waters of the ſky and of the ſea undermine, dig up, and ravage the earth in ſeveral different ways. Among the various ſhocks to which the Caribbee iſlands are expoſed from the fury of the boiſterous ocean, there is one diſtinguiſhed by the name of *raz de maree*, or *whirlpool*. It conſtantly happens once, twice, or thrice, from July to October, and always on the weſtern coaſts, becauſe it takes place after the time of the weſterly or ſoutherly winds, or while they blow. The waves, which at a diſtance ſeem to advance gently within 400 or 500 yards, ſuddenly ſwell againſt the ſhore, as if acted upon in an oblique direction by ſome ſuperior force, and break with the greateſt impetuoſity. The ſhips which are then upon the coaſt, or in the roads beyond it, unable either to keep their anchors or to put out to ſea, are daſhed to pieces againſt the land, and all on board moſt commonly periſh. The hurricane is another terrible phenomenon in theſe iſlands, by which incredible damage is occaſioned; but happily it occurs not often.

The produce of the Caribbee iſlands is exceedingly valuable to the Europeans, conſiſting of ſugar, rum, molaſſes, indigo, &c. a particular account of which is given under the names of the reſpective iſlands as they occur in the order of the alphabet.

CARIBBIANA, or Caribiana, the north-eaſt coaſt of Terra Firma, in South America, otherwiſe called *New Andalusia*.

CARICA, the papaw. See Botany *Index*.

The fruit of one ſpecies is by the inhabitants of the Caribbee iſlands eaten with pepper and ſugar as melons, but is much inferior to a melon in its native country; but thoſe which have ripened in Britain were deteſtable: the only uſe to which Mr Miller ſays he has known them put was, when they were about half grown, to ſoak them in ſalt water to get out the acrid juice, and then pickle them for onangos, to which they are a good ſubſtitute.

CARICATURA, in painting, denotes the concealment of real beauties, and the exaggeration of blemiſhes, but ſtill ſo as to preſerve a reſemblance of the object. The word is Italian; formed of *carica*, a load, burden, or the like.

CARICOUS, an epithet given to ſuch tumours as reſemble the figure of a fig. They are frequently found in the piles.

CARIES, the corruption or mortification of a bone. See Medicine and Surgery *Index*.

CARIGNAN, a fortified town of Piedmont, ſituated on the river Po, about ſeven miles ſouth of Turin. E. Long. 7. 25. N. Lat. 44. 30. It was taken in 1544 by the French; who demoliſhed the fortifications, but ſpared the caſtle. It was alſo taken, and retaken, in 1691.

CARILLONS,

Carillons || Carinthia.

CARILLONS, a ſpecies of chimes frequent in the Low Countries, particularly at Ghent and Antwerp, and played on a number of bells in a belfrey, forming a complete ſeries or ſcale of tones and ſemitones, like thoſe on the harpſichord and organ. There are petals communicating with the great bells, upon which the *carilloneur* with his feet plays the baſs to ſprightly airs, performed with the two hands upon the upper ſpecies of keys. Theſe keys are projecting ſticks, wide enough aſunder to be ſtruck with violence and velocity by either of the hands edgewiſe, without the danger of hitting the neighbouring key. The player is provided with a thick leather covering for the little finger of each hand, to guard againſt the violence of the ſtroke. Theſe carillons are heard through a large town.

CARINA, a Latin term, properly ſignifying the *keel* of a ſhip; or that long piece of timber running along the bottom of the ſhip from head to ſtern, upon which the whole ſtructure is built or framed.

Carina is alſo frequently uſed for the whole capacity or bulk of a ſhip: containing the hull or all the ſpace below the deck. Hence the word is alſo ſometimes uſed by a figure for the whole ſhip.

Carina is alſo uſed in the ancient architecture. The Romans gave the name *carina* to all buildings in form of a ſhip, as we ſtill give the name *nave* to the middle or principal vault of our Gothic churches; becauſe it has that figure.

Carina, among anatomiſts, is uſed to denote the *ſpina dorſi;* as likewiſe for the fibrous rudiments or embryo of a chick appearing in an incubated egg. The carina conſiſts of the entire *vertebræ*, as they appear after ten or twelve days incubation. It is thus called, becauſe crooked in form of the keel of a ſhip.—Botaniſts alſo, for the like reaſon, uſe the word *carina*, to expreſs the lower petalum of a papilionaceous flower.

Carinæ were alſo weepers or women hired among the ancient Romans to weep at funerals: they were thus called from *Caria*, the country whence moſt of them came.

CARINOLA, an epiſcopal town of Italy, in the kingdom of Naples, and Terra di Lavoro. E. Long. 15. 5. N. Lat. 41. 15.

CARINTHIA, a duchy of Germany, in the circle of Auſtria, bounded by the archbiſhopric of Saltzburg on the north, and by Carniola and the Venetian territories on the ſouth, on the weſt by Tyrol, and on the eaſt by Stiria. A part of this country was anciently called *Carnia*, and the inhabitants *Carni;* but the former afterwards obtained the name of *Carinthia*, and the latter *Carantani* or *Carinthi*. The air of this country is cold, and the ſoil in general mountainous and barren; but there are ſome fruitful dales and valleys in it, which produce wheat and other grain. The lakes, brooks, and rivers, which are very numerous, abound with fiſh; and the mountains yield lead and iron, and in many places are covered with woods. The river Drave, which runs acroſs the country, is the moſt conſiderable in Carinthia. The inhabitants are partly deſcendants of the ancient Germans, and partly of the Sclavonians or Wends. The ſtates are conſtituted as in Auſtria, and their aſſemblies are held at Clagenfurt. The archbiſhop of Saltzburg and the biſhop of Bamberg have conſiderable territories in this country. Chriſtianity was planted here in the 7th century. The only profeſſion tolerated at preſent is the Roman Catholic. The biſhops are thoſe of Gurk, and Lavant, who are ſubject to the archbiſhop of Saltzburg. This duchy was formerly a part of Bavaria. In the year 1282, the emperor Rodolph I. gave it to Maynard count of Tyrol, on condition that when his male iſſue failed, it ſhould revert to the houſe of Auſtria; which happened in 1331. Carinthia has its particular governor or *land-captain*, as he is called; and contributes annually towards the expence of the military eſtabliſhment 637,695 florins. Only one regiment of foot is uſually quartered in it.

Caripi || Carlingford.

CARIPI, a kind of cavalry in the Turkiſh army. The caripi to the number of about 1000, are not ſlaves, nor bred up in the ſeraglio, like the reſt; but are generally Moors or renegado Chriſtians, who having followed adventures, being poor, and having their fortune to ſeek by their dexterity and courage, have arrived at the rank of horſe guards to the Grand Signior.

CARISSA. See Botany *Index*.

CARITAS.—The *poculum caritatis*, or grace cup, was an extraordinary allowance of wine or other liquors, wherein the religious at feſtivals drank in commemoration of their founders and benefactors.

CARISBROOK castle, a caſtle ſituated in the middle of the Iſle of Wight, where King Charles I. was impriſoned. W. Long. 1. 30. N. Lat. 50. 40.

CARISTO, an epiſcopal city of Greece, in the eaſtern part of the iſland of Negropont, near Cape Loro. E. Long. 24. 15. N. Lat. 38. 6.

CARKE, denotes the 30th part of a sarplar of wool.

CARLE. See Churl.

CARLETON, Sir Dudley, was born in Oxfordſhire, 1573, and bred in Chriſt-church college. He went as ſecretary to Sir Ralph Winwood into the Low Countries, when King James reſigned the cautionary towns to the States; and was afterwards employed for 20 years as ambaſſador to Venice, Savoy, and the United Provinces. King Charles created him Viſcount Dorcheſter, and appointed him one of his principal ſecretaries of ſtate; in which office he died in 1631. He was eſteemed a good ſtateſman, though an honeſt man; and publiſhed ſeveral political works.

CARLINA, the carline thistle. See Botany *Index*.

CARLINE, or caroline thistle. See Carlina. It is ſaid to have been diſcovered by an angel to Charlemagne, to cure his army of the plague; whence its denomination.

Carline or *Caroline*, a ſilver coin current in the Neapolitan dominions, and worth about 4d. of our money.

Carlines, or Carlings, in a ſhip, two pieces of timber lying fore and aft, along from one beam to another, directly over the keel; ſerving as a foundation for the whole body of the ſhip. On theſe the ledges reſt, whereon the planks of the deck and other matters of carpentry are made faſt. The carlines have their ends let into the beams called *culver-tail-ways*.

Carline Knees, are timbers going athwart the ſhip, from the ſides to the hatchway, ſerving to ſuſtain the deck on both ſides.

CARLINGFORD, a port town of Ireland, ſeated

on

Carliſle. on Carlingford bay, in the county of Louth, and province of Leinſter, 22 miles north of Drogheda. W. Long. 6. 24. N. Lat. 24. 5.

CARLISLE, the capital city of the county of Cumberland, ſeated on the ſouth of the river Eden, and between the Petterel on the eaſt, and the Caude on the weſt. It is ſurrounded by a ſtrong ſtone wall, and has a pretty large caſtle in the weſtern part of it, as alſo a citadel in the eaſtern part, built by Henry VIII. It flouriſhed in the time of the Romans, as appears from the antiquities that are to be met with here, and the Roman coins that have been dug up. At the departure of the Romans this city was ruined by the Scots and Picts; and was not rebuilt till the year 680, by Egfrid, who encompaſſed it with a wall, and repaired the church. In the 8th and 9th centuries, the whole country was again ruined, and the city laid deſolate by the incurſions of the Norwegians and Danes. In this condition it remained till the time of William Rufus; who repaired the walls and the caſtle, and cauſed the houſes to be rebuilt. It was fortified by Henry I. as a barrier againſt Scotland; he alſo placed a garriſon in it, and made it an epiſcopal ſee. It was twice taken by the Scots, and afterwards burnt accidentally in the reign of Richard II. The cathedral, the ſuburbs, and 1500 houſes, were deſtroyed at that time. It is at preſent in a good condition; and has three gates, the Engliſh on the ſouth, the Scotch on the north, and the Iriſh on the weſt. It has two pariſhes, and as many churches, St Cuthbert's and St Mary's, the laſt of which is the cathedral, and is ſeparated from the town by a wall of its own. The eaſtern part, which is the neweſt, is a curious piece of workmanſhip, The choir with the aiſles is 71 feet broad; and has a ſtately eaſt-window 48 feet high and 30 broad, adorned with curious pillars. The roof is elegantly vaulted with wood; and is embelliſhed with the arms of England and France quartered; as alſo with Piercy's, Lucy's, Warren's, Mowbray's and many others. In the choir are the monuments of three biſhops who are buried there. This ſee was erected in 1133 by King Henry I. and made ſuffragan to the archbiſhop of York. The cathedral church here had been founded a ſhort time before by Walter, deputy in theſe parts for King William Rufus, and by him dedicated to the Virgin Mary. He likewiſe built a monaſtery, and filled it with canons regular of St Auguſtine. This foundation continued till the diſſolution of monaſteries, when its lands were added to the ſee, and the maintenance of a dean, &c. placed here in their room. The church was almoſt ruined by the uſurper Cromwell and his ſoldiers; and has never ſince recovered its former beauty, although repaired after the Reſtoration. This dioceſe contains the greateſt part of the counties of Cumberland and Weſtmorland, in which are only 93 pariſhes; but theſe (as all the northern are) exceeding large; and of them 18 are impropriations. Here is one archdeacon, viz. of Carliſle. The ſee is valued in the king's books at 530l. 4s. 11½d, but is computed to be worth annually 2800l. The clergy's tenth amounts only to 161l. 1s. 7½d. To this cathedral belong a biſhop, a dean, a chancellor, an archdeacon, four prebendaries, eight minor canons, &c. and other inferior officers and ſervants.

The Picts wall, which was built acroſs the country from Newcaſtle, terminates near this place. Carliſle was a fortified place, and ſtill has its governor and lieutenant-governor, but no garriſon. It was taken by the rebels, Nov. 15. 1745; and was retaken by the duke of Cumberland on the 10th of December following, and deprived of its gates. It is governed by a mayor, twelve aldermen, two bailiffs, &c. and has a conſiderable market on Saturdays. The manufactures of Carliſle are chiefly of printed linens, for which near 3000l. per annum is paid in duties. It is alſo noted for a great manufacture of whips, in which a great number of children are employed.—Salmons appear in the Eden in numbers, ſo early as the months of December and January; and the London and even Newcaſtle markets are ſupplied with early fiſh from this river: but it is remarkable, that they do not viſit the Eſk in any quantity till April; notwithſtanding the mouths of the two rivers are at a ſmall diſtance from each other.—Carliſle ſends two members to parliament, and gives title of earl to a branch of the Howard family.

Carlock Carlſcrona.

CARLOCK, in commerce, a ſort of iſinglaſs, made with the ſturgeon's bladder, imported from Archangel. The chief uſe of it is for clarifying wine, but is alſo uſed by the dyers. The beſt carlock comes from Aſtracan, where a great quantity of ſturgeon is caught.

CARLOSTAD, or CARLSTAD, a town of Sweden, in Wermeland, ſeated on the lake Wermer, in E. Long. 14. 4. N. Lat. 59. 16.

CARLOSTAD, or *Carlſtadt*, a town of Hungary, capital of Croatia, and the uſual reſidence of the governors of the province. It is ſeated on the river Kulph, in E. Long. 16. 5. N. Lat. 45. 34.

CARLOWITZ, a ſmall town of Hungary, in Sclavonia, remarkable for a peace concluded here between the Turks and Chriſtians in 1669. It is ſeated on the weſt ſide of the Danube, in E. Long. 19. 5. N. Lat. 45. 25.

CARLSCRONA, or CARLSCROON, a ſea port town in the Baltic, belonging to Sweden. It derives its origin and name from Charles XI. who firſt laid the foundation of a new town in 1680, and removed the fleet from Stockholm to this place, on account of its advantageous ſituation in the centre of the Swediſh ſeas, and the ſuperior ſecurity of its harbour. The greateſt part of Carlſcrona ſtands upon a ſmall rocky iſland, which riſes gently in a bay of the Baltic; the ſuburbs extend over another ſmall rock, and along the mole cloſe to the baſon where the fleet is moored. The way into the town from the mainland is carried over a dyke to an iſland, and from thence along two long wooden bridges joined by a barren rock. The town is ſpacious, and contains about 18,000 inhabitants. It is adorned with one or two handſome churches, and a few tolerable houſes of brick; but the generality of buildings are of wood. The ſuburbs are fortified towards the land by a ſtone wall. The entrance into the harbour, which by nature is extremely difficult from a number of ſhoals and rocky iſlands, is ſtill further ſecured from the attack of an enemy's fleet by two ſtrong forts built on two iſlands, under the batteries of which all veſſels muſt paſs.

Formerly veſſels in this port when careened and repaired, were laid upon their ſides in the open harbour,

Carlſtadt || Carmel.

bour, until a dock, according to a plan given by Polheim, was hollowed in the ſolid rock: it was begun in 1714, and finiſhed in 1724; but as it was too ſmall for the admiſſion of men of war, it has lately been enlarged, and is now capable of receiving a ſhip of the firſt rate. But new docks have been begun upon a ſtupendous plan, worthy of the ancient Romans. According to the original ſcheme, it was intended to conſtruct 30 docks, for building and laying up the largeſt ſhips, at the extremity of the harbour. A large baſon, capable of admitting two men of war, is deſigned to communicate, by ſluices, with two ſmaller baſons, from each of which are to extend, like the radii of a circle, five rows of covered docks: each row is to be ſeparated by walls of ſtone; and each dock to be provided with ſluice gates, ſo as to be filled or emptied by means of pumps. Cloſe to the docks, magazines for naval ſtores, are to be conſtructed, and the whole to be encloſed with a ſtone wall. The project was begun in 1757; but was much neglected until the acceſſion of his preſent majeſty, who warmly patronized the arduous undertaking. At the commencement of the works, 25,000l. were annually expended upon them; which ſum has been leſſened to about 6000l. per annum, and the number of docks reduced to 20. The firſt dock was finiſhed in 1779, and it was computed that the whole number would be executed in 20 years.

CARLSTADT, a town of Germany, in the circle of Franconia, and biſhopric of Wurtſburg, ſeated on the river Maine, in E. Long. 9. 51. N. Lat. 50. 0.

CARLTON, a town in Norfolk held by this tenure, that they ſhall preſent 1000 herrings baked in 14 pyes to the king, wherever he ſhall be when they firſt come in ſeaſon.

CARMAGNIOLA, a fortified town of Italy, in Piedmont, with a good caſtle. It was taken by the French in 1691, and retaken by Prince Eugene the ſame year. It is ſeated in a country abounding in corn, flax, and ſilk, near the river Po, in E. Long. 7. 32. N. Lat. 44. 43.

CARMANIA, in *Ancient Geography*, a country of Aſia, to the eaſt of Perſia, having Parthia to the north, Gedroſia to the eaſt, to the ſouth the Perſian gulf or ſea in part, and in part the Indian, called the *Carmanian Sea;* diſtinguiſhed into *Carmania Deſerta*, and *Carmania Propria*, the former lying to the ſouth of Parthia; and to the ſouth of that, the *Propria*, quite to the ſea. Its name is from the Syriac, *Carma*, ſignifying a "vine," for which that country was famous, yielding cluſters three feet long. Now KERMAN, or CARIMANIA, a province of modern Perſia.

CARMEL, a high mountain of Paleſtine, ſtanding on the ſkirts of the ſea, and forming the moſt remarkable headland on all that coaſt. It extends eaſtward from the ſea as far as the plain of Jezreel, and from the city of that name quite to Cæſarea on the ſouth. It ſeems to have had the name of *Carmel* from its great fertility; this word, according to the Hebrew import, ſignifying the *vine of God*, and is uſed in Scripture to denote any fruitful ſpot, or any place planted with fruit trees. This mountain, we are aſſured, was very fertile. Mr Sandys acquaints us, that, when well cultivated, it abounds with olives, vines, and variety of fruits and herbs both medicinal and aromatic. Others, however, repreſent it as rather dry and barren; which perhaps may have happened from the neglect of agriculture ſo common in all parts of the Turkiſh empire, eſpecially where they are expoſed to the incurſions of the Arabs. Carmel is the name of the mountain, and of a city built on it; as well as of a heathen deity worſhipped in it, but without either temple or ſtatue: though anciently there muſt have been a temple, as we are told that this mountain was a favourite retreat of Pythagoras, who ſpent a good deal of time in the temple, without any perſon with him. But what hath rendered Mount Carmel moſt celebrated and revered both by Jews and Chriſtians, is its having been the reſidence of the prophet Elijah, who is ſuppoſed to have lived there in a cave (which is there ſhown), before he was taken up into heaven.

Carmelites.

CARMELITES, an order of religious, making one of the four tribes of mendicants or begging friars; and taking its name from Mount Carmel, formerly inhabited by Elias, Eliſha, and the children of the prophets; from whom this order pretends to deſcend in an uninterrupted ſucceſſion. The manner in which they make out their antiquity has ſomething in it too ridiculous to be rehearſed. Some among them pretend they are deſcendants of Jeſus Chriſt; others go further, and make Pythagoras a Carmelite, and the ancient druids regular branches of their order. Phocas, a Greek monk, ſpeaks the moſt reaſonably. He ſays, that in his time, 1185, Elias's cave was ſtill extant on the mountain; near which were the remains of a building which intimated that there had been anciently a monaſtery; that, ſome years before, an old monk, a prieſt of Calabria, by revelation, as he pretended, from the prophet Elias, fixed there, and aſſembled ten brothers. In 1209, Albert, patriarch of Jeruſalem, gave the ſolitaries a rigid rule, which Papebroch has ſince printed. In 1217, or, according to others, 1226, Pope Honorius III. approved and confirmed it. This rule contained 16 articles; one of which confined them to their cells, and enjoined them to continue day and night in prayer; another prohibited the brethren having any property; another enjoined faſting from the feaſt of the holy croſs till Eaſter, except on Sundays; abſtinence at all times from fleſh was enjoined by another article; one obliged them to manual labour; another impoſed a ſtrict ſilence on them from veſpers till the tierce the next day.

The peace concluded by the emperor Frederic II. with the Saracens, in the year 1229, ſo diſadvantageous to Chriſtendom, and ſo beneficial to the infidels, occaſioned the Carmelites to quit the Holy Land, under Alan the fifth general of the order. He firſt ſent ſome of the religious to Cyprus, who landed there in the year 1328, and founded a monaſtery in the foreſt of Fortania. Some Sicilians, at the ſame time, leaving Mount Carmel, returned to their own country, where they founded a monaſtery in the ſuburbs of Meſſina. Some Engliſh departed out of Syria, in the year 1240, to found others in England. Others of Provence, in the year 1244, founded a monaſtery in the deſert of Aigualates, a league from Marſeilles: and thus, the number of their monaſteries increaſing, they held their European general chapter in the year 1245, at their monaſtery of Aylesford in England.—This order is ſo much increaſed, that it has, at preſent,

Carmen ‖ Carminatives.

38 provinces, beſides the congregation of Mantua, in which are 54 monaſteries, under a vicar-general; and the congregations of Barefooted Carmelites in Italy and Spain, which have their peculiar generals.

After the eſtabliſhment of the Carmelites in Europe, their rule was in ſome reſpects altered; the firſt time, by Pope Innocent IV. who added to the firſt article a precept of chaſtity, and relaxed the 11th which enjoins abſtinence at all times from fleſh, permitting them, when they travelled, to eat boiled fleſh: this pope likewiſe gave them leave to eat in a common refectory, and to keep aſſes or mules for their uſe. Their rule was again mitigated by the popes Eugenius IV. and Pius II. Hence the order is divided into two branches, viz. *the Carmelites of the ancient obſervance*, called the *moderate*, or *mitigated;* and thoſe *of the ſtrict obſervance*, who are the *barefooted Carmelites;* a reform ſet on foot in 1540, by S. Thereſa, a nun of the convent of Avila, in Caſtile: theſe laſt are divided into two congregations, that of Spain and that of Italy.

The habit of the Carmelites was at firſt white, and the cloak laced at the bottom with ſeveral liſts. But Pope Honorius IV. commanded them to change it for that of the Minims. Their ſcapulary is a ſmall woollen habit of a brown colour, thrown over their ſhoulders. They wear no linen ſhirts; but inſtead of them linſey-woolſey, which they change twice a week in the ſummer, and once a week in the winter.

If a monk of this order lies with a woman, he is prohibited ſaying maſs for three or four years, is declared infamous, and obliged to diſcipline himſelf publicly once a-week. If he is again guilty of the ſame fault, his penance is doubled; and if a third time, he is expelled the order.

CARMEN, an ancient term among the Latins, uſed in a general ſenſe to ſignify a verſe; but more particularly to ſignify a ſpell, charm, form of expiation, or execration, couched in a few words placed in a myſtic order, on which its efficacy depended. Pezron derives the word *carmen* from the Celtic *carm*, the ſhout of joy, or the verſes which the ancient bards ſung to encourage the ſoldiers before the combat.—*Carmen* was anciently a denomination given alſo to precepts, laws, prayers, imprecations, and all ſolemn formulæ couched in a few words placed in a certain order, though written in proſe. In which ſenſe it was that the elder Cato wrote a *Carmen de moribus*, which was not in verſe but in proſe.

CARMENTALIA, a feaſt among the ancient Romans, celebrated annually upon the 11th of January, in honour of Carmenta, or Carmentis, a propheteſs of Arcadia, mother of Evander, with whom ſhe came into Italy 60 years before the Trojan war. The ſolemnity was alſo repeated on the 15th of January, which is marked in the old calendar by *Carmentalia relata*. This feaſt was eſtabliſhed on occaſion of a great fecundity among the Roman dames, after a general reconciliation with their huſbands, with whom they had been at variance, in regard of the uſe of coaches being prohibited them by an edict of the ſenate. This feaſt was celebrated by the women: he who offered the ſacrifices was called *ſacerdos carmentalis*.

CARMINATIVES, medicines uſed in colics, or other flatulent diſorders, to diſpel the wind.

Carmine ‖ Carneades.

The word comes from the Latin *carminare*, to card or teaze wool, and figuratively to attenuate and diſcuſs wind or vapours, and promote their diſcharge by perſpiration. Though Dr Quincy makes it more myſterious: He ſays it comes from the word *carmen*, taking it in the ſenſe of an invocation or charm; and makes it to have been a general name for all medicines which operated like charms, i. e. in an extraordinary manner. Hence, as the moſt violent pains were frequently thoſe ariſing from pent-up wind, which immediately ceaſe upon diſperſion; the term *carminative* became in a peculiar ſenſe applied to medicines which gave relief in windy caſes, as if they cured by enchantment: but this interpretation ſeems a little too far ſtrained.

CARMINE, a powder of a very beautiful red colour, bordering upon purple; and uſed by painters in miniature, though rarely, on account of its great price. The manner of preparing it is kept a ſecret by the colour-makers; neither do any of thoſe receipts which have for a long time been publiſhed concerning the preparation of this and other colours at all anſwer the purpoſe. See *Colour-making*.

CARMONA, a town of Italy in Friuli, and in the country of Goritz, ſeated on a mountain near the river Indri. It belongs to the houſe of Auſtria. E. Long. 5. 37. N. Lat. 46. 15.

CARMONA, an ancient town of Spain, in Andaluſia. The gate towards Seville is one of the moſt extraordinary pieces of antiquity in all Spain. It is ſeated in a fertile country, 15 miles eaſt of Seville. W. Long. 5. 37. N. Lat. 37. 34.

CARNATION. See Dianthus, Botany *Index*.

Carnation Colour, among painters, is underſtood of all the parts of a picture, in general, which repreſent fleſh, or which are naked and without drapery. Titian and Corregio in Italy, and Rubens and Vandyke in Flanders, excelled in carnations.—In colouring for fleſh, there is ſo great a variety, that it is hard to lay down any general rules for inſtruction therein; neither are there any regarded by thoſe who have acquired a ſkill this way; the various colouring for carnations may be eaſily produced, by taking more or leſs red, blue, yellow, or biſtre, whether for the firſt colouring, or for the finiſhing; the colour for women ſhould be bluiſh, for children a little red, both freſh and gay; and for men it ſhould incline to yellow, eſpecially if they are old.

Carnation, among dyers. To dye a carnation, or red roſe colour, it is directed to take liquor of wheat bran a ſufficient quantity, alum three pounds, tartar two ounces; boil them, and enter 20 yards of broad cloth; after it has boiled three hours, cool and waſh it: take freſh clear bran liquor a ſufficient quantity, madder five pounds; boil and ſodden according to art. —The Bow dyers know that the ſolution of tin, being put in a kettle to the alum and tartar, in another proceſs, makes the cloth, &c. attract the colour into it, ſo that none of the cochineal is left, but the whole is abſorbed by the cloth.

CARNEADES, a celebrated Greek philoſopher, was a native of Cyrene in Africa, and founder of the third academy. He was ſo fond of ſtudy, that he not only avoided all entertainments, but forgot even to eat at his own table; his maid-ſervant Meliſſa was obliged

Carneades ‖ Carneia.

ged to put the victuals into his hand. He was an antagoniſt of the Stoics; and applied himſelf with great eagerneſs to refute the works of Chryſippus, one of the moſt celebrated philoſophers of their ſect. The power of his eloquence was dreaded even by a Roman ſenate. The Athenians being condemned by the Romans to pay a fine of 500 talents for plundering the city of Oropus, ſent ambaſſadors to Rome, who got the fine mitigated to 100 talents. Carneades the Academic, Diogenes the Stoic, and Critolaus the Peripatetic, were charged with this embaſſy. Before they had an audience of the ſenate, they harangued to great multitudes in different parts of the city. Carneades's eloquence was diſtinguiſhed from that of the others by its ſtrength and rapidity. Cato the Elder made a motion in the ſenate that theſe ambaſſadors ſhould be immediately ſent back, becauſe it was very difficult to diſcern the truth through the arguments of Carneades. The Athenian ambaſſadors (ſaid many of the ſenators) were ſent rather to force us to comply with their demands, than to ſolicit them by perſuaſion; meaning, that it was impoſſible to reſiſt the power of that eloquence with which Carneades addreſſed himſelf to them. According to Plutarch, the youth at Rome were ſo charmed by the orations of this philoſopher, that they forſook their exerciſes and other diverſions, and were carried with a kind of madneſs to philoſophy; the humour of philoſophizing ſpreading like enthuſiaſm. This grieved Cato, who was particularly afraid of the ſubtility of wit and ſtrength of argument with which Carneades maintained either ſide of a queſtion. Carneades harangued in favour of juſtice one day, and the next day againſt it, to the admiration of all who heard him, among whom were Galba and Cato, the greateſt orators of Rome. This was his element; he delighted in demoliſhing his own work; becauſe it ſerved in the end to confirm his grand principle, that there are only probabilities or reſemblances of truth in the mind of man; ſo that of two things directly oppoſite, either may be choſen indifferently. Quintilian remarks, that though Carneades argued in favour of injuſtice, yet he himſelf acted according to the ſtrict rules of juſtice. The following was a maxim of Carneades: "If a man privately knew that his enemy, or any other perſon whoſe death might be of advantage to him, would come to ſit down on graſs in which there lurked an aſp, he ought to give him notice of it, though it were in the power of no perſon whatever to blame him for being ſilent." Carneades, according to ſome, lived to be 85 years old; others make him to be 90: his death is placed in the 4th year of the 162d Olympiad.

CARNEDDE, in Britiſh antiquity, denote heaps of ſtones, ſuppoſed to be druidical remains, and thrown together on occaſion of confirming and commemorating a covenant, Gen. xxxi. 46. They are very common in the iſle of Angleſey, and were alſo uſed as ſepulchral monuments, in the manner of *tumuli*; for Mr Rowland found a curious urn in one of theſe carnedde. Whence it may be inferred, that the Britons had the cuſtom of throwing ſtones on the deceaſed. From this cuſtom is derived the Welſh proverb, *Karn ardyben*, "Ill betide thee."

CARNEIA, in antiquity, a feſtival in honour of Apollo, ſurnamed Carneus, held in moſt cities of Greece, but eſpecially at Sparta, where it was firſt inſtituted.

Carnel ‖ Carnifex.

The reaſon of the name, as well as the occaſion of the inſtitution, is controverted. It laſted nine days, beginning on the 13th of the month Carneus. The ceremonies were an imitation of the method of living and diſcipline uſed in camps.

CARNEL.—The building of ſhips firſt with their timber and beams, and after bringing on their planks, is called *carnel work*, to diſtinguiſh it from clinch work.

Veſſels alſo which go with mizen ſails inſtead of main ſails are by ſome called carnels.

CARNELIAN, in *Natural Hiſtory*, a precious ſtone, of which there are three kinds, diſtinguiſhed by three colours, a red, a yellow, and a white. The red is very well known among us; is found in roundiſh or oval maſſes, much like our common pebbles; and is generally met with between an inch and two or three inches in diameter; it is of a fine, compact, and cloſe texture; of a gloſſy ſurface; and, in the ſeveral ſpecimens, is of all the degrees of red, from the paleſt fleſh-colour to the deepeſt blood-red. It is generally free from ſpots, clouds, or variegations: but ſometimes it is veined very beautifully with an extremely pale red, or with white; the veins forming concentric circles, or other leſs regular figures, about a nucleus, in the manner of thoſe of agates. The pieces of carnelian which are all of one colour, and perfectly free from veins, are thoſe which our jewellers generally make uſe of for ſeals, though the variegated ones are much more beautiful. The carnelian is tolerably hard, and capable of a very good poliſh: it is not at all affected by acid menſtruums: the fire diveſts it of a part of its colour, and leaves it of a pale red; and a ſtrong and long-continued heat will reduce it to a pale dirty gray.

The fineſt carnelians are thoſe of the Eaſt Indies; but there are very beautiful ones found in the rivers of Sileſia and Bohemia; and we have ſome not deſpicable ones in England.

Though the ancients have recommended the carnelian as aſtringent, and attributed a number of fanciful virtues to it, we know of no other uſe of the ſtone than the cutting ſeals on it; to which purpoſe it is excellently adapted, as being not too hard for cutting, and yet hard enough not to be liable to accidents, to take a good poliſh, and to ſeparate eaſily from the wax.

CARNERO, in *Geography*, a name given to that part of the gulf of Venice which extends from the weſtern coaſt of Iſtria to the iſland of Groſſa and the coaſt of Morlachia.

Carnero is likewiſe the name of the cape to the weſt of the mouth of the bay of Gibraltar.

CARNIFEX, among the Romans, the common executioner. By reaſon of the odiouſneſs of his office, the carnifex was expreſsly prohibited by the laws from having his dwelling houſe within the city. In middle-age writers carnifex alſo denotes a butcher.

Under the Anglo-Daniſh kings, the carnifex was an officer of great dignity; being ranked with the archbiſhop of York, Earl Goodwin, and the lord ſteward. Flor. Wigorn. ann. 1040, *Rex Hardecanutus Alfricum Ebor. Archiep. Goodwinum comitem, Edricum diſpenſatorem,*

Carniola, Carnival.

torem, *Throndſuum* carnificem, *et alios magnæ dignitatis viros Londinum miſit.*

CARNIOLA, a duchy of Germany, bounded on the ſouth by the Adriatic ſea, and that part of Iſtria poſſeſſed by the republic of Venice; on the north, by Carinthia and Stiria; on the eaſt, by Sclavonia and Croatia; on the weſt, by Friuli, the county of Gorz or Goritz, and a part of the gulf of Venice; extending in length about 110 miles, and in breadth about 50. It had its ancient name *Carnia*, as well as the modern one *Carniola*, from its ancient inhabitants the *Carni*, a tribe of Scythians, otherwiſe called *Japides*, whence this and the adjacent countries were alſo called *Japidia*.

Carniola is full of mountains, ſome of which are cultivated and inhabited, ſome covered with wood, others naked and barren, and others continually buried in ſnow. The valleys are very fruitful. Here are likewiſe mines of iron, lead, and copper; but ſalt muſt be had from the ſovereign's magazines. There are ſeveral rivers, beſides many medicinal ſprings and inland lakes. The common people are very hardy, going barefooted in winter through the ſnow, with open breaſts, and ſleeping on a hard bench without bed or bolſter. Their food is alſo very coarſe and mean. In winter, when the ſnow lies deep on the ground, the mountaineers bind either ſmall baſkets, or long thin narrow boards, like the Laplanders, to their feet, on which, with the help of a ſtout ſtaff or pole, they deſcend with great velocity from the mountains. When the ſnow is frozen, they make uſe of a ſort of irons or ſkaits. In different parts of the country the inhabitants, eſpecially the common ſort, differ greatly in their dreſs, language, and manner of living. In Upper and Lower Carniola they wear long beards. The languages chiefly in uſe are the Sclavonian or Wendiſh, and German; the firſt by the commonalty, and the latter by people of faſhion. The duchy is divided into the Upper, Lower, Middle, and Inner, Carniola. The principal commodities exported hence are, iron, ſteel, lead, quickſilver, white and red wine, oil of olives, cattle, ſheep, cheeſe, linen, and a kind of woollen ſtuff called *mahalan*, Spaniſh leather, honey, walnuts, and timber; together with all manner of woodwork, as boxes, diſhes, &c. Chriſtianity was firſt planted here in the eighth century. Lutheraniſm made a conſiderable progreſs in it; but, excepting the Walachians or Uſkokes, who are of the Greek church, and ſtyle themſelves *Staraverzi*, i. e. old believers, all the inhabitants at preſent are Roman Catholics. Carniola was long a marquiſate or margravate; but in the year 1231 was erected into a duchy. As its proportion towards the maintenance of the army, it pays annually 363,171 florins: but only two regiments of foot are quartered in it.

CARNIVAL, or CARNAVAL, a time of rejoicing, a ſeaſon of mirth, obſerved with great ſolemnity by the Italians, particularly at Venice, holding from the twelfth day till Lent.

The word is formed from the Italian *Carnavalle*; which M. Du Cange derives from *Carn-a-val*, by reaſon the fleſh then goes to pot, to make amends for the ſeaſon of abſtinence then enſuing. Accordingly, in the corrupt Latin, he obſerves, it was called *Carneleyamen*, and *Carniſprivium*; as the Spaniards ſtill denominate it *carnes tollendas*.

Carnivorous.

Feaſts, balls, operas, concerts of muſic, intrigues, marriages, &c. are chiefly held in carnival time. The carnival begins at Venice the ſecond holiday in Chriſtmas: Then it is they begin to wear maſks, and open their playhouſes and gaming-houſes; the place of St Mark is filled with mountebanks, jack puddings, pedlars, whores, and ſuch like mob, who flock thither from all parts. There have been no leſs than ſeven ſovereign princes and 30,000 foreigners here to partake of theſe diverſions.

CARNIVOROUS, an epithet applied to thoſe animals which naturally ſeek and feed on fleſh.

It has been a diſpute among naturaliſts, whether man is naturally carnivorous. Thoſe who take the negative ſide of the queſtion, inſiſt chiefly on the ſtructure of our teeth, which are moſtly inciſores or molares; not ſuch as *carnivorous* animals are furniſhed with, and which are proper to tear fleſh in pieces: to which it may be added, that, even when we do feed on fleſh, it is not without a preparatory alteration by boiling, roaſting, &c. and even then that it is the hardeſt of digeſtion of all foods. To theſe arguments Dr Wallis ſubjoins another, which is, that all quadrupeds which feed on herbs or plants have a long colon, with a cæcum at the upper end of it, or ſomewhat equivalent, which conveys the food by a long and large progreſs, from the ſtomach downwards, in order to its ſlower paſſage and longer ſtay in the inteſtines: but that, in *carnivorous* animals, ſuch cæcum is wanting, and inſtead thereof there is a more ſhort and ſlender gut, and a quicker paſſage through the inteſtines. Now, in man, the cæcum is very viſible: a ſtrong preſumption that nature, who is ſtill conſiſtent with herſelf, did not intend him for a *carnivorous* animal.—It is true, the cæcum is but ſmall in adults, and ſeems of little or no uſe; but in a fœtus it is much larger in proportion: And it is probable, our cuſtomary change of diet, as we grow up, may occaſion this ſhrinking. But to theſe arguments Dr Tyſon replies, that if man had been by nature deſigned not to be *carnivorous*, there would doubtleſs have been found, ſomewhere on the globe, people who do not feed on fleſh; which is not the caſe. Neither are carnivorous animals always without a colon and cæcum; nor are all animals carnivorous which have theſe parts: the opoſſum for inſtance, hath both a colon and cæcum, and yet feeds on poultry and other fleſh; whereas the hedgehog, which has neither colon nor cæcum, and ſo ought to be carnivorous, feeds only on vegetables. Add to this, that hogs which have both, will feed upon fleſh when they can get it; and rats and mice, which have large cæcums, will feed on bacon as well as bread and cheeſe. Laſtly, The human race are furniſhed with teeth neceſſary for the preparation of all kinds of foods; from whence it would ſeem, that nature intended we ſhould live on all. And as the alimentary duct in the human body is fitted for digeſting all kinds of foods, ought we not rather to conclude, that nature did not intend to deny us any?

It is no leſs diſputed whether mankind were *carnivorous* before the flood. St Jerome, Chryſoſtome, Theodoret, and other ancients, maintain, that all animal food

Carnosity || Carolina.

food was then forbidden; which opinion is alſo ſtrenuouſly ſupported among the moderns by Curcellæus, and refuted by Heidegger, Danzius, Bochart, &c. See ANTEDILUVIANS.

CARNOSITY is uſed by ſome authors for a little fleſhy excreſcence, tubercle, or wen, formed in the urethra, the neck of the bladder, or yard, which ſtops the paſſage of the urine.—Carnoſities are very difficult of cure: they are not eaſily known but by introducing a probe into the paſſage, which there meets with reſiſtance. They uſually ariſe from ſome venereal malady ill managed.

CARO, ANNIBAL, a celebrated Italian poet, was born at Civita Nuovo in 1507. He became ſecretary to the duke of Parma, and afterwards to Cardinal Farneſe. He was alſo made a knight of Malta. He tranſlated Virgil's Æneid into his own language, with ſuch propriety and elegance of expreſſion, that he was allowed by the beſt judges to have equalled the original. He alſo tranſlated Ariſtotle's rhetoric, two orations of Gregory Nazianzen, with a diſcourſe of Cyprian. He wrote a comedy; and a miſcellany of his poems was printed at Venice in 1584. He died at Rome in 1566.

CAROLINA, a province of North America, comprehending the moſt weſterly part of Florida, and lying between 29 and 36 degrees of N. Lat. It is bounded on the eaſt by the Atlantic, and on the weſt by the river Miſſiſſippi, on the north by Virginia, on the ſouth by Georgia, and to the ſouth of Georgia by the Floridas.

This country is ſeated between the extremities of heat and cold, though the heat is more troubleſome in ſummer than the cold in winter; their winters being very ſhort, and the froſty mornings frequently ſucceeded by warm days. The air is generally ſerene and clear the greateſt part of the year; but in February and March the inhabitants have a cuſtom of burning the woods, which cauſes ſuch a ſmoke, as to ſtrangers would ſeem to proceed from a fog or thickneſs in the air. The ſmoke of the tar-kilns likewiſe deceives ſtrangers, and gives them an ill opinion of the air of Carolina; to which alſo conduces a cuſtom of the Indians of ſetting fire to the woods in their huntings, for many miles round. The great rains are in winter, though they are not without heavy ſhowers at midſummer; add to theſe the conſtant dews that fall in the night, which refreſh the ground and ſupply the plants with moiſture. In North Carolina, the northweſt winds in the winter occaſion very pinching weather; but they are not of long continuance. Weſterly winds bring very pleaſant weather; but the ſoutherly are hot and unwholeſome, occaſioning fevers and other diſorders. But this muſt be underſtood of ſummer, for in winter they are very comfortable. The depth of winter is towards the latter end of February, and then the ice is not ſtrong enough to bear a man's weight. In Auguſt and September there are ſometimes great ſtorms and ſqualls of wind, which are ſo violent as to make lanes of 100 feet wide, more or leſs, through the woods, tearing up the trees by the roots. Theſe ſtorms generally happen once in about ſeven years; and are attended with dreadful thunder, lightning, and heavy rains. They commonly happen about the time of the hurricanes which rage ſo fatally among the iſlands between the tropics; and ſeem to be occaſioned by them, or to proceed from the ſame cauſe: but by the time they reach Carolina, their force is much abated; and the farther north they proceed, ſo much the more do they decreaſe in fury. The ſoil on the coaſt is ſandy; but farther up, the country is ſo fruitful that they have not yet been at the trouble to manure their land. The grains moſt cultivated are Indian corn and rice, though any ſort will thrive well enough; they have alſo pulſe of ſeveral ſorts, little known in England. All kinds of garden ſtuff uſual in England are cultivated here, and may be had in great plenty. They export large quantities yearly of rice, pitch, tar, turpentine, deer-ſkins, and timber for building; cypreſs, cedar, ſaſſafras, oak, walnut, and pine. Beſides theſe, they alſo ſend out beef, pork, tallow, hides, furs, wheat, peas, potatoes, honey, bees-wax, myrtle-wax, tobacco, ſnake-root, cotton, ſeveral ſorts of gums and medicinal drugs. Indigo is alſo cultivated in this province, but of an inferior quality to that which comes from the Caribbee iſlands. It hath been attempted in vain to cultivate vines, and produce ſilk, in this country; for though the froſts here do not continue long without intervals of warmer weather, they are ſufficient to check the growth of the vine, as well as olives, dates, oranges, &c. The furs are bought of the Indians with vermilion, lead, gunpowder, coarſe cloth, iron, and ſpirituous liquors. As yet they have not a ſufficient number of handicraftſmen; which renders labour very dear, and a ſupply of clothes from Europe neceſſary. The aſpect of the country is very fine, being adorned with beautiful rivers and creeks, and the woods with lofty timber, which afford delightful and pleaſant ſeats for the planters, and render the fencing their lands very eaſy. And as they have plenty of fiſh, wild-fowl, and veniſon, beſides other neceſſaries which this country produces naturally, they live eaſy and luxuriouſly.

Carolina. *Univ. Hiſt.* xxvi. 88.

Their rivers are large, and navigable a great many miles upon the country. They riſe near the mountains, and abound with delicate fiſh, beſides water-fowl of different kinds. In ſome there are iſlands which yield good paſture, without the annoyance of wild beaſts. The chief mountains are the Cherokee or Allegany mountains, which are ſituated north and northweſt, five or ſix hundred miles diſtant from the ſea. They are very high; and abound with trees, plants, ſtones, and minerals, of different kinds.

This country is divided into North and South Carolina, and Georgia; each of which, before the late revolution, was under a particular governor. The North is ſubdivided into four counties, Granville, Colliton, Berkley, and Craven; and South Carolina into two, Clarendon and Albemarle. This laſt is alſo divided into 14 pariſhes or townſhips, each of which has a brick or timber church. The former likewiſe has the ſame number of pariſhes. Charleſtown is the capital of the whole country.

Carolina was diſcovered by Sebaſtian Cabot about the year 1500, in the reign of Henry VII. but the ſettling of it being neglected by the Engliſh, a colony of French Proteſtants, by the encouragement of Admiral Coligni, were tranſported thither; and named the place of their firſt ſettlement *Arx Carolina*, in honour of their prince, Charles IX. of France: but in

Carolina. a ſhort time that colony was deſtroyed by the Spaniards; and no other attempt was made by any European power to ſettle there till the year 1664, when 800 Engliſh landed at Cape Fear in North Carolina, and took poſſeſſion of the country. In 1670 Cha. II. of Britain granted Carolina to the lords Berkley, Clarendon, Albemarle, Craven, and Aſhly, Sir George Carteret, Sir William Berkley, and Sir John Colliton. The plan of government for this new colony was drawn up by the famous Mr Locke, who very wiſely propoſed an univerſal toleration in religious matters. The only reſtriction in this reſpect was, that every perſon claiming the protection of that ſettlement, ſhould, at the age of 17, regiſter himſelf in ſome particular communion. To civil liberty, however, our philoſopher was not ſo favourable; the code of Carolina gave to the eight proprietors who founded the colony, and to their heirs, not only all the rights of a monarch, but all the powers of legiſlation. The court, which was compoſed of this ſovereign body, and called the *Palatinate Court*, was inveſted with the right of nominating to all employments and dignities, and even of conferring nobility; but with new and unprecedented titles. They were, for inſtance, to create in each county two *caciques*, each of whom was to be poſſeſſed of 24,000 acres of land; and a *landgrave*, who was to have 80,000. The perſons on whom theſe honours ſhould be beſtowed were to compoſe the upper houſe, and their poſſeſſions were made unalienable. They had only the right of farming or letting out a third part of them at the moſt for three lives. The lower houſe was compoſed of the deputies from the ſeveral counties and towns. The number of this repreſentative body was to be increaſed as the colony grew more populous. No tenant was to pay more than about a ſhilling per acre, and even this rent was redeemable. All the inhabitants, however, both ſlaves and freemen, were under an obligation to take up arms upon the firſt order from the Palatine court.

It was not long before the defects of this conſtitution became apparent. The proprietary lords uſed every endeavour to eſtabliſh an arbitrary government; and, on the other hand, the coloniſts exerted themſelves with great zeal to avoid ſervitude. In conſequence of this ſtruggle, the whole province, diſtracted with tumults and diſſenſions, became incapable of making any progreſs, though great things had been expected from its particular advantages of ſituation. Though a toleration in religious matters was a part of the original conſtitution, diſſenſions aroſe likewiſe on that account. In 1705, Carteret, now Lord Granville, who, as the oldeſt of the proprietors, was ſole governor of the colony, formed a deſign of obliging all the non-conformiſts to embrace the ceremonies of the Church of England; and this act of violence, though diſavowed and rejected by the mother-country, inflamed the minds of the people. In 1720, while this animoſity was ſtill ſubſiſting, the province was attacked by ſeveral bands of ſavages, driven to deſpair by a continued courſe of the moſt atrocious violence and injuſtice. Theſe unfortunate wretches were all put to the ſword: but, in 1728, the lords proprietors having refuſed to contribute towards the expences of an expedition, of which they were to ſhare the immediate benefits, were deprived of their prerogative, except Lord Granville, who ſtill retained his eighth part. The reſt received a recompenſe of about 24,000l. The colony was taken under the immediate protection of the crown, and from that time began to flouriſh. The diviſion into North and South Carolina now took place, and the ſettlement of Georgia commenced in 1732. See GEORGIA. Caroline || Carp.

CAROLINE. See CARLINE.

CAROLINE-Books, the name of four books, compoſed by order of Charlemagne, to refute the ſecond council of Nice. Theſe books are couched in very harſh and ſevere terms, containing 120 heads of accuſation againſt the council of Nice, and condemning the worſhip of images.

CAROLOSTADIANS, or CARLOSTADIANS, an ancient ſect or branch of Lutherans, who denied the real preſence of Chriſt in the euchariſt.

They were thus denominated from their leader Andrew Caroloſtadius, who having originally been archdeacon of Wittemberg, was converted by Luther, and was the firſt of all the reformed clergy who took a wife; but diſagreeing afterwards with Luther, chiefly in the point of the ſacrament, founded a ſect apart. The Caroloſtadians are the ſame with what are otherwiſe denominated Sacramentarians, and agree in moſt things with the Zuinglians.

CAROLUS, an ancient Engliſh broad piece of gold ſtruck under Charles I. Its value has of late been at 23s. ſterling, though at the time it was coined it is ſaid to have been rated at 20s.

CAROLUS, a ſmall copper coin, with a little ſilver mixed with it, ſtruck under Charles VIII. of France. The carolus was worth 12 deniers when it ceaſed to be current. Thoſe which are ſtill current in trade in Lorrain, or in ſome neighbouring provinces, go under the name of French ſols.

CAROTIDS, in *Anatomy*, two arteries of the neck, which convey the blood from the aorta to the brain; one called the right, and the other the left, carotid.

CARP, in *Ichthyology*, the Engliſh name of a ſpecies of cyprinus. See CYPRINUS, ICHTHYOLOGY *Index*.

The carp is the moſt valuable of all kinds of fiſh for ſtocking of ponds. It is very quick in its growth, and brings forth the ſpawn three times a-year, ſo that the increaſe is very great. The female does not begin to breed till eight or nine years old; ſo that in breeding-ponds a ſupply muſt be kept of carp of that age. The beſt judges allow, that, in ſtocking a breeding-pond, four males ſhould be allowed to twelve females. The uſual growth of a carp is two or three inches in length in a year; but, in ponds which receive the fattening of common ſewers, they have been known to grow from five inches to 18 in one year. A feeding-pond of one acre extent will very well feed 300 carp of three years old, 300 of two years, and 400 of one year old. Carp delight greatly in ponds that have marley ſides; they love alſo clay-ponds well ſheltered from the winds and grown with weeds and long graſs at the edges, which they feed on in the hot months. Carp and tench thrive very faſt in ponds and rivers near the ſea, where the water is a little brackiſh; but they are not ſo well taſted as thoſe which live in freſh water. Grains, blood, chicken-guts, and the like, may at times

Carpates ‖ Carpentras.

times be thrown into carp-ponds, to help to fatten the fiſh. To make them grow large and fat, the growth of graſs under the water ſhould by all means poſſible be encouraged. For this purpoſe, as the water decreaſes in the ſummer, the ſides of the pond left naked and dry ſhould be well raked with an iron rake, to deſtroy all the weeds, and cut up the ſurface of the earth; hay-ſeed ſhould then be ſown plentifully in theſe places; and more ground prepared in the ſame manner, as the water falls more and more away. By this means there will be a fine and plentiful growth of young graſs along the ſides of the pond to the water's edge; and when the rains fill up the pond again, this will be all buried under the water, and will make a feeding-place for the fiſh where they will come early in the morning, and will fatten greatly upon what they find there.

CARPATES, or ALPES BASTARNICÆ, in *Ancient Geography*, a range of mountains, running out between Poland, Hungary, and Tranſylvania. Now called the Carpathian Mountains.

CARPATHIUM MARE, (Horace, Ovid); the ſea that waſhes the iſland Carpathus.

CARPATHUS, an iſland on the coaſt of Aſia, two hundred ſtadia in compaſs, and an hundred in length. Its name is ſaid to be from its ſituation on the coaſt of Caria. It lies between Rhodes and Crete, in the ſea which, from this iſland, is called the Carpathian ſea, and has to the north the Ionian, to the ſouth the Egyptian, to the weſt the Cretan and African ſeas. It is two hundred furlongs in compaſs, and a hundred in length. It had anciently, according to Strabo, four cities; according to Scylax, only three. Ptolemy mentions but one, which he calls Poſidium. This iſland is now called Scarpanto.

CARPÆA, a kind of dance anciently in uſe among the Athenians and Magneſians, performed by two perſons, the one acting a labourer, the other a robber. The labourer, laying by his arms, goes to ploughing and ſowing, ſtill looking warily about him as if afraid of being ſurpriſed: the robber at length appears; and the labourer, quitting his plough, betakes himſelf to his arms, and fights in defence of his oxen. The whole was performed to the ſound of flutes, and in cadence. Sometimes the robber was overcome and ſometimes the labourer; the victor's reward being the oxen and plough. The deſign of the exerciſe was to teach and accuſtom the peaſants to defend themſelves againſt the attacks of ruffians.

CARPENTER, a perſon who practiſes CARPENTRY. The word is formed from the French *charpentier*, which ſignifies the ſame, formed of *charpente*, which denotes timber; or rather from the Latin *carpentarius*, a maker of *carpenta*, or carriages.

CARPENTER of a Ship, an officer appointed to examine and keep in order the frame of a ſhip, together with her maſts, yards, boats, and all other wooden machinery. It is his duty in particular to keep the ſhip *tight*; for which purpoſe he ought frequently to review the decks and ſides, and to caulk them when it is neceſſary. In the time of battle, he is to examine up and down, with all poſſible attention, in the lower apartments of the ſhip, to ſtop any holes that may have been made by ſhot, with wooden plugs provided of ſeveral ſizes.

CARPENTRAS, an epiſcopal town of France, in the department of Vaucluſe, and capital of Venaiſſin. It is ſubject to the pope; and is ſeated on the river Auſon, at the foot of a mountain. E. Long. 5. 6. N. Lat. 44. 4. Carpentras ‖ Carpi.

CARPENTRY, the art of cutting, framing, and joining large pieces of wood, for the uſes of building. It is one of the arts ſubſervient to architecture, and is divided into houſe-carpentry and ſhip-carpentry: the firſt is employed in raiſing, roofing, flooring of houſes, &c. and the ſecond in the building of ſhips †, barges, &c. The rules in carpentry are much the ſame with thoſe of JOINERY; the only difference is, that carpentry is uſed in the larger and coarſer work, and joinery in the ſmaller and curious. See CENTRE, ROOF, and *STRENGTH of Materials*.

† See *Ship-Building*.

CARPENTUM, in *Antiquity*, a name common to divers ſorts of vehicles, anſwering to coaches as well as waggons, or even carts, among us. The carpentum was originally a kind of car or vehicle in which the Roman ladies were carried; though in after times it was alſo uſed in war. Some derive the word from *carro*; others from *Carmenta* the mother of Evander, by a converſion of the *m* into *p*.

CARPET, a ſort of covering of ſtuff, or other materials, wrought with the needle or on a loom, which is part of the furniture of a houſe, and commonly ſpread over tables, or laid upon the floor.

Perſian and Turkey carpets are thoſe moſt eſteemed; though at Paris there is a manufactory after the manner of Perſia, where they make them little inferior, not to ſay finer, than the true Perſian carpets. They are velvety, and perfectly imitate the carpets which come from the Levant. There are alſo carpets of Germany, ſome of which are made of woollen ſtuffs, as ſerges, &c. and called ſquare carpets: others are made of wool alſo, but wrought with the needle, and pretty often embelliſhed with ſilk; and, laſtly, there are ſome made of dogs hair. We have likewiſe carpets made in Britain, which are uſed either as floor-carpets, or to cover chairs, &c. It is true, we are not arrived at the like perfection in this manufacture with our neighbours the French; but may not this be owing to the want of a like public encouragement?

CARPET-Knights, a denomination given to gown-men and others, of peaceable profeſſions, who, on account of their birth, office, or merits to the public, or the like, are, by the prince, raiſed to the dignity of knighthood.

They take the appellation *carpet*, becauſe they uſually receive their honours from the king's hands in the court, kneeling on a carpet. By which they are diſtinguiſhed from knights created in the camp, or field of battle, on account of their military proweſs. Carpet-knights poſſeſs a medium between thoſe called *truck*, or *dunghill-knights*, who only purchaſe or merit the honour by their wealth, and *knights-bachelors*, who are created for their ſervices in the war.

CARPI, a principality of Modena in Italy, lying about four leagues from that city. It formerly belonged to the houſe of Pio; the elder ſons of which bore the title of *Princes of St Gregory*. In the beginning of the 14th century, *Manfroy* was the firſt prince of Carpi; but in the 16th, the emperor Charles V. gave the principality to Alfonzo duke of Ferrara. This

Carpi ‖ Carpocratians.

This nobleman, in recompenſe, gave to Albert Pio, to whom the principality of Carpi belonged of right, the town of Saſſuolo and ſome other lands. Albert was, however, at laſt obliged to retire to Paris; where, being ſtripped of all his eſtates, he died in 1538, with the reputation of being one of the beſt and braveſt men of his age. The family of Pio is yet in being, and continues attached to the French court. Some of them have even been raiſed to the purple, and ſtill make a figure in Europe.

CARPI, a town of Italy in the duchy of Modena, and capital of the laſt mentioned principality. It has a ſtrong caſtle, and is ſituated in E. Long. 11. 12. N. Lat. 44. 45.

CARPI, a town of the Veroneſe in Italy, memorable for a victory gained by the Imperialiſts over the French in 1701. It is ſubject to the Venetians; and is ſituated on the river Adige, in E. Long. 11. 39. N. Lat. 45. 10.

CARPI, *Ugo da*, an Italian painter, of no very conſiderable talents in that art, but remarkable for being the inventor of that ſpecies of engraving on wood, diſtinguiſhed by the name of chiaro-ſcuro, in imitation of drawing. This is performed by uſing more blocks than one; and Ugo da Carpi uſually had three; the firſt for the outline and dark ſhadows, the ſecond for the lighter ſhadows, and the third for the half tint. In that manner he ſtruck off prints after ſeveral deſigns, and cartons of Raphael; particularly one of the Sibyl, a Deſcent from the Croſs, and the Hiſtory of Simon the Sorcerer. He died in 1500. This art was brought to a ſtill higher degree of perfection by Balthaſar Peruzzi of Siena, and Parmigiano, who publiſhed ſeveral excellent deſigns in that manner.

CARPI, *Girolamo da*, hiſtory and portrait painter, was born at Ferrara in 1501, and became a diſciple of Garofala. When he quitted that maſter, he devoted his whole time, thoughts, and attention, to ſtudy the works of Correggio, and to copy them with a moſt critical care and obſervation; in which labour he ſpent ſeveral years at Parma, Modena, and other cities of Italy, where the beſt works of that exquiſite painter were preſerved. He acquired ſuch an excellence in the imitation of Correggio's ſtyle, and copying his pictures, that many paintings finiſhed by him were taken for originals, and not only admired, but were eagerly purchaſed by the connoiſſeurs of that time. Nor is it improbable that ſeveral of the paintings of Girolamo de Carpi paſs at this day for the genuine work of Correggio himſelf. He died in 1556.

CARPINUS, the HORN-BEAM. See BOTANY *Index*.

CARPOBALSAM, in the *Materia Medica*, the fruit of the tree which yields the true oriental balſam. The carpobalſam is uſed in Egypt, according to Proſper Alpinus, in all the intentions in which the balſam itſelf is applied: but the only uſe the Europeans make of it is in Venice treacle and mithridate; and in theſe not a great deal, for cubebs and juniper-berries are generally ſubſtituted in its place.

CARPOCRATIANS, a branch of the ancient Gnoſtics, ſo called from *Carpocrates*, who in the ſecond century revived and improved upon the errors of Simon Magus, Menander, Saturninus, and other Gnoſtics. He owned, with them, one ſole principle and father of all things, whoſe name as well as nature was unknown. The word, he taught, was created by angels, vaſtly inferior to the firſt principle. He oppoſed the divinity of Jeſus Chriſt; making him a mere man, begotten carnally on the body of Mary by Joſeph, though poſſeſſed of uncommon gifts which ſet him above other creatures. He inculcated a community of women; and taught, that the ſoul could not be purified, till it had committed all kinds of abominations, making that a neceſſary condition of perfection.

Carpolithi ‖ Carraveira.

CARPOLITHI, or FRUIT-STONE ROCKS of the Germans, are compoſed of a kind of jaſper, of the nature of the amygdaloides, or almond-ſtones. Bertrand aſſerts that the latter are thoſe which appear to be compoſed of elliptical pieces like petrified almonds, though, in truth, they are only ſmall oblong pieces of calcareous ſtone rounded by attrition, and ſometimes ſmall muſſel-ſhells connected by a ſtony concretion. The name of Carpolithi, however, is given in general by writers on foſſils to all ſorts of ſtony concretions that have any reſemblance to fruit of whatever kind.

CARPUS, the WRIST. See ANATOMY *Index*.

CARR, a kind of rolling throne, uſed in triumphs, and at the ſplendid entries of princes. See CHARIOT.

The word is from the ancient Gauliſh, or Celtic, *Carr*; mentioned by Cæſar, in his Commentaries, under the name *Carrus*. Plutarch relates, that Camillus having entered Rome in triumph, mounted on a carr drawn by four white horſes, it was looked on as too haughty an innovation.

CARR is alſo uſed for a kind of light open chariot. The carr, on medals, drawn either by horſes, lions, or elephants, uſually ſignifies either a triumph or an apotheoſis: ſometimes a proceſſion of the images of the gods at a ſolemn ſupplication, and ſometimes of thoſe of ſome illuſtrious family at a funeral. The carr covered, and drawn by mules, only ſignifies a conſecration, and the honour done any one of having his image carried at the gates of the circus. See CONSECRATION, &c.

CARRAC, or CARRACA, a name given by the Portugueſe to the veſſels they ſend to Braſil and the Eaſt Indies; being very large, round built, and fitted for fight as well as burden. Their capacity lies in their depth, which is very extraordinary. They are narrower above than underneath, and have ſometimes ſeven or eight floors; they carry about 2000 tons, and are capable of lodging 2000 men; but of late they are little uſed. Formerly they were alſo in uſe among the knights of Rhodes, as well as among the Genoeſe, and other Italians. It is a cuſtom among the Portugueſe, when the carracs returned from India, not to bring any boat or ſloop for the ſervice of the ſhip beyond the iſland of St Helena; at which place they ſink them on purpoſe; in order to take from the crew all hopes or poſſibility of ſaving themſelves, in caſe of ſhipwreck.

CARRARA MARBLE, among our artificers, the name of a ſpecies of white marble, which is called *marmor lunenſe*, and *ligu ſtrium* by the ancients: it is diſtinguiſhed from the Parian, now called the ſtatuary marble, by being harder and leſs bright.

CARRAVEIRA a town of Turkey in Europe, with

Carriage || Carrick-Fergus.

with a Greek archbiſhop's ſee. E. Long. 22. 25. N. Lat. 40. 27.

CARRIAGE, a vehicle ſerving to convey perſons, goods, merchandiſes, and other things, from one place to another.

For the conſtruction and mechanical principles of wheel-carriages, ſee MECHANICS.

CARRIAGE of a cannon, the frame or timber-work on which it is mounted, ſerving to point it for ſhooting, or to carry it from one place to another. It is made of two planks of wood, commonly of one-half the length of the gun, called the *cheeks*, and joined by three wooden tranſums, ſtrengthened with three bolts of iron. It is mounted on two wheels, but on a march has two fore-wheels with limbers added. The principal parts of a carriage are the cheeks, tranſum, bolts, plates, trainbands, bridges, bed, hooks, trunnion holes, and capſquare.

Block-CARRIAGE, a cart made on purpoſe for carrying mortars and their beds from place to place.

Truck-CARRIAGE, two ſhort planks of wood, ſupported on two axletrees, having four trucks of ſolid wood for carrying mortars or guns upon battery, where their own carriages cannot go. They are drawn by men.

CARRICK, the ſouthern diviſion of the ſhire of Ayr in Scotland. It borders on Galloway; ſtretches 32 miles in length; and is a hilly country fit for paſturage. The chief rivers are the Stinchar and Girvan, both abounding with ſalmon. Here are alſo ſeveral lakes and foreſts; and the people on the coaſt employ themſelves in the herring-fiſhery, though they have no harbour of any conſequence. The only towns of this diſtrict are Girvan and Ballantrae; the former at the mouth of the river of the ſame name, and the latter at the mouth of the Stinchar; and Maybole, an inland town. The prince of Wales, as prince of Scotland, is earl of Carrick.

CARRICK on the Sure, a town of Ireland, in the county of Tipperary and province of Munſter. W. Long. 7. 14. N. Lat. 52. 16.

CARRICK-Fergus, a town of Ireland, in the county of Antrim and province of Ulſter. It is a town and county in itſelf, and ſends two members to parliament. It is very rich and populous, with a good harbour; and is governed by a mayor, recorder, and ſheriffs.—It has, however, been of far greater conſequence than at preſent, as appears from the mayor having been admiral of a conſiderable extent of coaſt in the counties of Down and Antrim, and the corporation enjoying the cuſtoms paid by all veſſels within theſe bounds, the creeks of Belfaſt and Bangor excepted. This grant was repurchaſed, and the cuſtomhouſe transferred to Belfaſt.—Here is the ſkeleton of a fine houſe built by Lord Chicheſter in the reign of James I. an old Gothic church with many family monuments, and a very large old caſtle. The town was formerly walled round, and ſome part of the walls is ſtill remaining entire.—Carrick-fergus is ſeated on a bay of the ſame name in the Iriſh channel; and is noted for being the landing place of King William in 1690. Here alſo Thurot made a deſcent in 1759, took poſſeſſion of the caſtle, and carried away hoſtages for the ranſom of the town; but being ſoon after purſued by Commodore Elliot, his three ſhips were taken, and he himſelf was killed.

Carrier, Carrier-Pigeon.

CARRIER, is a perſon that carries goods for others for hire. A common carrier, having the charge and carriage of goods, is to anſwer for the ſame, or the value, to the owner. And where goods are delivered to a carrier, and he is robbed of them, he ſhall be charged and anſwer for them, becauſe of the hire. If a common carrier who is offered his hire, and who has convenience, refuſes to carry goods, he is liable to an action, in the ſame manner as an innkeeper who refuſes to entertain a gueſt. See ASSUMPSIT.

One brought a box to a carrier, with a large ſum of money, and the carrier demanded of the owner what was in it; he anſwered, that it was filled with ſilks, and ſuch like goods: upon which the carrier took it, and was robbed, and adjudged to make it good; but a ſpecial acceptance, as, *provided there is no charge of money*, would have excuſed the carrier.—A perſon delivered to a carrier's book-keeper two bags of money ſealed up, to be carried from London to Exeter, and told him that it was 200l. and took his receipt for the ſame, with promiſe of delivery for 10s. *per cent.* carriage and riſk: though it be proved that there was 400l. in the bags, if the carriage be robbed, he ſhall anſwer only for 200l. becauſe there was a particular undertaking for that ſum and no more; and his reward, which makes him anſwerable, extends no farther. If a common carrier loſes goods which he is intruſted to carry, a ſpecial action on the caſe lies againſt him, on the cuſtom of the realm, and not trover; and ſo of a common carrier by boat. An action will lie againſt a porter, carrier, or barge-man, upon his bare receipt of the goods, if they are loſt through negligence. Alſo a lighter-man ſpoiling goods he is to carry, by letting water come to them, action of the caſe lies againſt him, on the common cuſtom. *Jacob's Law. Dict.*

CARRIER-Pigeon, or *courier-pigeon*, a ſort of pigeon uſed, when properly trained, to be ſent with letters from one place to another. See COLUMBA.

Though you carry theſe birds hood-winked, 20, 30, nay, 60 or 100 miles, they will find their way in a very little time to the place where they were bred. They are trained to this ſervice in Turkey and Perſia: and are carried firſt, while young, ſhort flights of half a mile, afterwards more, till at length they will return from the fartheſt part of the kingdom. Every baſhaw has a baſket of theſe pigeons bred in the ſeraglio, which, upon any emergent occaſion, as in inſurrection, or the like, he diſpatches, with letters braced under their wings, to the ſeraglio; which proves a more ſpeedy method, as well as a more ſafe one, than any other; he ſends out more than one pigeon, however, for fear of accidents. Lithgow aſſures us, that one of theſe birds will carry a letter from Babylon to Aleppo, which is 30 days journey, in 48 hours. This is alſo a very ancient practice: Hirtius and Brutus, at the ſiege of Modena, held a correſpondence with one another by means of pigeons. And Ovid tells us, that Tauroſthenes, by a pigeon ſtained with purple, gave notice to his father of his victory at the Olympic Games, ſending it to him at Ægina.

In modern times, the moſt noted were the pigeons of Aleppo, which ſerved as couriers at Alexandretta and Bagdad. But this uſe of them has been laid aſide for the laſt 30 or 40 years, becauſe the Curd robbers kill-

Carron. ed the pigeons. The manner of ſending advice by them was this: they took pairs which had young ones, and carried them on horſeback to the place from whence they wiſhed them to return, taking care to let them have a full view. When the news arrived, the correſpondent tied a billet to the pigeon's foot, and let her looſe. The bird, impatient to ſee its young, flew off like lightning, and arrived at Aleppo in ten hours from Alexandretta, and in two days from Bagdad. It was not difficult for them to find their way back, ſince Aleppo may be diſcovered at an immenſe diſtance. This pigeon has nothing peculiar in its form, except its noſtrils, which, inſtead of being ſmooth and even, are ſwelled and rough.

CARRON, a ſmall but remarkable river in Scotland, riſing about the middle of the iſthmus between the friths of Forth and Clyde. Both its ſource, and the place where it emptieth itſelf into the ſea, are within the ſhire of Stirling, which it divides into two nearly equal parts. The whole length of its courſe, which is from weſt to eaſt, is not above 14 miles. It falls into the frith of Forth about three miles to the north-eaſt of Falkirk. The ſtream thereof is but ſmall, and ſcarce deſerves the notice of a traveller; yet there is no river in Scotland, and few in the whole iſland of Britain, whoſe banks have been the ſcene of ſo many memorable tranſactions. When the Roman empire was in all its glory, and had its eaſtern frontiers upon the Euphrates, the banks of Carron were its boundaries upon the north-weſt; for the wall of Antoninus *, which was raiſed to mark the limits of that mighty empire, ſtood in the neighbourhood of this river, and ran parallel to it for ſeveral miles.

* See *Antoninus's Wall.*

Near the middle of its courſe, in a pleaſant valley, ſtand two beautiful mounts, called the *Hills of Dunipace*, which are taken notice of by moſt of the Scotiſh hiſtorians as monuments of great antiquity. The whole ſtructure of theſe mounts is of earth; but they are not both of the ſame form and dimenſions. The more eaſterly one is perfectly round, reſembling an oven, and about fifty feet in height: And that this is an artificial work does not admit of the leaſt doubt; but we cannot affirm the ſame, with equal certainty, of the other, though it has been generally ſuppoſed to be ſo too. It bears no reſemblance to the eaſtern one either in ſhape or ſize. At the foundation it is nearly of a triangular form; but the ſuperſtructure is quite irregular; nor does the height thereof bear any proportion to the extent of its baſe. Theſe mounts are now planted with firs, which, with the pariſh-church of Dunipace ſtanding in the middle between them, and the river running hard by, give this valley a very romantic appearance. The common account given of thoſe mounts is, that they were erected as monuments of a peace concluded in that place between the Romans and the Caledonians, and that their name partakes of the language of both people; *Dun* ſignifying a hill in the old language of this iſland, and *Pax* "peace" in the language of Rome. The compound word, *Dunipace*, ſignifies "the hills of peace." And we find in hiſtory, that no leſs than three treaties of peace were at different periods entered into between the Romans and Caledonians; the firſt by Severus about the year 210; the ſecond ſoon after, by his ſon Caracalla; and the third, by the uſurper Carauſius, about the year 280; but of which of theſe treaties Dunipace is a monument, we do not pretend to determine. If the concurring teſtimony of hiſtorians and antiquaries did not agree in giving this original to theſe mounts, we would be tempted to conjecture that they are ſepulchral monuments. Human bones and urns have been diſcovered in earthen fabrics of this kind in many parts of this iſland, and the little mounts or barrows which are ſcattered in great numbers about Stonhenge in Saliſbury plain are generally ſuppoſed to have been the ſepulchres of the ancient Britons. See Barrows. Carron.

From the valley of Dunipace, the river runs for ſome time in a deep and hollow channel, with ſteep banks on both ſides; here it paſſes by the foundations of the ancient Roman bridge; not far from which, as is generally thought, was the ſcene of the memorable conference betwixt the Scotiſh patriot William Wallace and Robert Bruce, father to the king of that name, which firſt opened the eyes of the latter to a juſt view, both of his own true intereſt and that of his country.

After the river has left the village and bridge of Larbert, it ſoon comes up to another ſmall valley, through the midſt of which it has now worn out to itſelf a ſtraight channel, whereas, in former ages, it had taken a conſiderable compaſs, as appears by the track of the old bed which is ſtill viſible. The high and circling banks upon the ſouth ſide give to this valley the appearance of a ſpacious bay; and, according to the tradition of the country, there was once an harbour here: nor does the tradition ſeem altogether groundleſs, pieces of broken anchors having been found here, and ſome of them within the memory of people yet alive. The ſtream tides would ſtill flow near the place, if they were not kept back by the dam-head built acroſs the river at Stenhouſe; and there is reaſon to believe, that the frith flowed conſiderably higher in former ages than it does at preſent. In the near neighbourhood of this valley, upon the ſouth, ſtand the ruins of ancient Camelon: which, after it was abandoned by the Romans, was probably inhabited, for ſome ages, by the natives of the country.

Another ancient monument, called *Arthur's Oven*, once ſtood upon the banks of the Carron; but was, with a ſpirit truely Gothic, entirely demoliſhed about 40 years ago. The corner of a ſmall incloſure between Stenhouſe and the Carron iron-works, is pointed out as the place of its ſituation. This is generally ſuppoſed to have been a Roman work: though it is not eaſy to conceive what could be their motive for erecting ſuch a fabric, at ſo great a diſtance from any other of their works, and in a ſpot which at that time muſt have been very remote and unfrequented. The form of it is ſaid to have been perfectly round, and riſing perpendicular for ſome yards at firſt, but afterwards gradually contracted, till it terminated in a narrow orifice at the top. Antiquaries are not agreed whether it had been a temple, or a trophy, or a mauſoleum; but the moſt common opinion is, that it had been a temple, and, Buchanan thinks, a temple of Terminus. Hector Boetius ſays, that there were benches of ſtone all around it upon the inſide; and that there had been a large

ſtone

Carron, Carron-Works.

ſtone for ſacrificing upon, or an altar, upon the ſouth ſide.

As the Carron extends over the half of the iſthmus, and runs ſo near the ancient boundaries of the Roman empire, the adjacent country fell naturally to be the ſcene of many battles and rencounters. Hiſtorians mention a bloody battle fought near the river between the Romans and the confederate army of the Scots and Picts in the beginning of the 5th century. The ſcenes of ſome of Oſſian's poems were, in the opinion of the tranſlator, upon the banks of this river. Here Fingal fought with Caracal, the ſon of the king of the world, ſuppoſed to have been the ſame with Caracalla, the ſon of the Roman emperor Severus. Here alſo young Oſcar the ſon of Oſſian, performed ſome of his heroic exploits. Hereabout was the ſtream of Crona, celebrated in the ancient compoſitions of the Gaelic bard; poſſibly that now called the water of Bonny, which runs in the neighbourhood of the Roman wall, and diſchargeth itſelf into the Carron at Dunipace. In thoſe poems, mention is made of a green vale upon the banks of this river, with a tomb ſtanding in the middle of it, where young Oſcar's party and the warriors of Caros met. We only take notice of this as it ſtrengthens the conjecture hazarded above, that the mounts of Dunipace, eſpecially the more eaſterly of them, were ſepulchral monuments.—About the diſtance of half a mile from the river, and near the town of Falkirk, lies the field of that battle which was fought by William Wallace and the Engliſh in the beginning of the 14th century. It goes by the name of *Graham's muir*, from the valiant John Graham, who fell there, and whoſe grave-ſtone is ſtill to be ſeen in the church-yard of Falkirk.

The river Carron, though it has long ſince ceaſed to roll its ſtream amidſt the din of arms, ſtill preſerves its fame, by lending its aid to trade and manufactures; (ſee the next article.)—The river is navigable for ſome miles near its mouth, and a conſiderable trade is carried on upon it by ſmall craft; for the convenience of which, its channel has of late years been ſtraightened and much ſhortened, and the great Canal * has its entrance from it.

* See the article *Canal*.

Carron-Works, a large iron-foundery, two miles north from Falkirk in Scotland. They are conveniently ſituated on the banks of the Carron, three miles above its entry into the frith of Forth. Above 100 acres of land have been converted into reſervoirs and pools, for water diverted from the river, by magnificent dams built above two miles above the works, which, after turning 18 large wheels for the ſeveral purpoſes of the manufacture, falls into a tide-navigation that conveys their caſtings to the ſea.

Theſe works are the greateſt of the kind in Europe, and were eſtabliſhed in 1760. At preſent, the buildings are of vaſt extent; and the machinery, conſtructed by Mr Smeaton, is the firſt in Britain, both in elegance and correctneſs: there are 1600 men employed, to whom is paid weekly above 650l. ſterling; which has greatly enriched the adjoining country; 6500 tons of iron are ſmelted annually from the mineral with pit-coal, and caſt into cannon, cylinders, &c.—In the founding of cannon, theſe works have lately arrived at ſuch perfection, that they make above 5000 pieces a-year, many of which are exported to foreign ſtates; and their guns of *new conſtruction* are the lighteſt and neateſt now in uſe, not excepting braſs guns; the 32 pounder ſhip-gun weighing 42 hundred weight, the 6 pounder 8 hundred-weight and one-half, and the other calibers in proportion.

Carronade || Carrucate.

The preſent proprietors are a chartered company, with a capital of 150,000l. ſterling, a common ſeal, &c. but their ſtock is confined to a very few individuals.

CARRONADE, a ſhort kind of ordnance, capable of carrying a large ball, and uſeful in cloſe engagements at ſea. It takes its name from Carron, the place where this ſort of ordnance was firſt made, or the principle applied to an improved conſtruction. See the article GUNNERY.

CARROT. See DAUCUS, BOTANY *Index*.

Deadly CARROT. See THAPSIA, BOTANY *Index*.

CARROUSAL, a courſe of horſes and chariots, or a magnificent entertainment exhibited by princes on ſome public rejoicing. It conſiſts in a cavalcade of ſeveral gentlemen, richly dreſſed and equipped after the manner of ancient cavaliers, divided into ſquadrons meeting in ſome public place, and practiſing juſts, tournaments, &c.—The laſt carrouſals were in the reign of Louis XIV.—The word comes from the Italian word *caroſello*, a diminitive of *carro*, "chariot." Tertullian aſcribes the invention of carrouſals to Circe; and will have then inſtituted in honour of the Sun, her father; whence ſome derive the word from *carrus*, or *carrus ſolis*. The Moors introduced ciphers, liveries, and other ornaments of their arms, with trappings, &c. for their horſes. The Goths added creſts, plumes, &c.

CARRUCA, in *Antiquity*, a ſplendid kind of carr, or chariot, mounted on four wheels, richly decorated with gold, ſilver, ivory, &c. in which the emperors, ſenators and people of condition, were carried. The word comes from the Latin *carrus*, or Britiſh *carr*, which is ſtill the Iriſh name for any wheel-carriage.

CARRUCA, or *Caruca*, is alſo uſed in middle age writers for a plough.

CARRUCA, or *Caruca*, alſo was ſometimes uſed for *carrucata*. See CARRUCATE.

CARRUCAGE (*carucagium*), a kind of tax anciently impoſed on every plough, for the public ſervice. See CARRUCATE and HIDAGE.

CARRUCAGE, *Carucage*, or *Caruage*, in huſbandry, denotes the ploughing of ground, either ordinary, as for grain, hemp, and flax; or extraordinary, as for woad, dyers weed, rape, and the like.

CARRUCATE, (*carrucata*), in our ancient laws and hiſtory, denotes a plough land, or as much arable ground as can be tilled in one year with one plough.

In Doomſday Inquiſition, the arable land is eſtimated in carrucates, the paſture in hides, and meadow in acres. Skene makes the *carrucata* the ſame with *hilda*, or *hida terræ*; Littleton the ſame with foc.

The meaſure of a carrucate appears to have differed in reſpect of place as well as time. In the reign of Richard I. it was eſtimated at 60 acres, and in another charter of the ſame reign at 100 acres: in the time of Edward I. at 180 acres; and in the 23d of Edward III. a carrucate of land in Burceſter contained 112 acres, and in Middleton 150 acres.

By a ſtatute under William III. for charging perſons

Carrying || Carſtairs.

ſons to the repair of the highways, a plough-land is rated at fifty pounds per annum, and may contain houſes, mills, wood, paſture, &c.

CARRYING, in *Falconry*, ſignifies a hawk's flying away with the quarry. Carrying is one of the ill qualities of a hawk, which ſhe acquires either by a diſlike of the falconer, or not being ſufficiently broke to the lure.

CARRYING, among huntſmen. When a hare runs on rotten ground (or even ſometimes in a froſt), and it ſticks to her feet, they ſay ſhe carries.

CARRYING, among riding-maſters. A horſe is ſaid to carry low, when having naturally an ill-ſhaped neck, he lowers his head too much. All horſes that arm themſelves carry low, but a horſe may carry low without arming. A French branch or gigot is preſcribed as a remedy againſt carrying low.

A horſe is ſaid to carry well, when his neck is raiſed or arched, and he holds his head high and firm, without conſtraint.

Carrying Wind, a term uſed by our dealers in horſes to expreſs ſuch a one as frequently toſſes his noſe as high as his ears, and does not carry handſomely. This is called *carrying wind;* and the difference between carrying in the wind, and beating upon the hand, is this: that the horſe who beats upon the hand, ſhakes the bridle and reſiſts it, while he ſhakes his head; but the horſe that carries in the wind puts up his head without ſhaking, and ſometimes beats upon the hand. The oppoſite to carrying in the wind, is arming and carrying low: and even between theſe two there is a difference in wind.

CARS, or Kars, a conſiderable and ſtrong town of Aſia, in Armenia, ſeated on a river of the ſame name, with a caſtle almoſt impregnable. E. Long. 43. 50. N. Lat. 41. 30.

CARSE, or *Carſe of Gowry*, a diſtrict of Perthſhire in Scotland. It lies on the north ſide of the Tay, and extends 14 miles in length from Dundee to Perth, and is from two to four in breadth. It is a rich plain country, cutivated like a garden, and producing as good harveſts of wheat as any in Great Britain. It abounds with all the neceſſaries of life: but from its low damp ſituation, the inhabitants are ſubject to agues, and the commonalty are in great want of firing. In this diſtrict, not far from the Tay, ſtands the houſe of Errol, which formerly belonged to the earls of that name, the chiefs of the ancient family of Hay, hereditary conſtables of Scotland.

CARSTAIRS, William, an eminent Scots divine, whoſe merit and good fortune called him to act in great ſcenes, and to aſſociate with men to whoſe ſociety and intercourſe his birth gave him few pretenſions to aſpire. A ſmall village in the neighbourhood of Glaſgow was the place of his nativity. His father, of whom little is known, exerciſed the functions of a clergyman.

Young Carſtairs turned his thoughts to the profeſſion of theology; and the perſecutions and oppreſſions of government, both in regard to civil and religious liberty, having excited his ſtrongeſt indignation, it became a matter of prudence that he ſhould proſecute his ſtudies in a foreign univerſity. He went accordingly to Utrecht; and his induſtry and attention being directed with ſkill, opened up and unfolded thoſe faculties which he was about to employ with equal honour to his country and himſelf. Carſtairs.

During his reſidence abroad, he became acquainted with Penſionary Fagel, and entered with warmth into the intereſt of the prince of Orange. On his return to Scotland to procure a licenſe to teach doctrines which he had ſtudied with the greateſt care, he became diſguſted with the proud and inſolent conduct of Archbiſhop Sharp, and prepared to reviſit Holland; where he knew that religious liberty was reſpected, and where he hoped he might better his condition by the connections he had formed.

His expectations were not vain. His prudence, his reſerve, and his political addreſs, were ſtrong recommendations of him to the prince of Orange; and he was employed in perſonal negotiations in Holland, England, and Scotland. Upon the elevation of his maſter to the Engliſh throne, he was appointed the king's chaplain for Scotland, and employed in ſettling the affairs of that kingdom. William, who carried politics into religion, was ſolicitous that epiſcopacy ſhould prevail there as univerſally as in England. Carſtairs, more verſant in the affairs of his native country, ſaw all the impropriety of this project, and the danger that would ariſe from the enforcing of it. His reaſonings, his remonſtrances, his intreaties, overcame the firmneſs of King William. He yielded to conſiderations founded alike in policy and in prudence; and to Carſtairs Scotland is indebted for the full eſtabliſhment of its church in the Preſbyterian form of government.

The death of King William was a ſevere affliction to him; and it happened before that prince had provided for him with the liberality he deſerved. He was continued, however, in the office of chaplain for Scotland by Queen Anne; and he was invited to accept the principality of the Univerſity of Edinburgh. He was one of the miniſters of the city, and four times moderator of the general aſſembly. Placed at the head of the church, he proſecuted its intereſt with zeal and with integrity. Nor were his influence and activity confined to matters of religion. They were exerted with ſucceſs in promoting the culture of the arts and ſciences. The univerſities of Scotland owe him obligations of the higheſt kind. He procured, in particular, an augmentation of the ſalaries of their profeſſors; a circumſtance to which may be aſcribed their reputation, as it enabled them to cultivate with ſpirit the different branches of knowledge.

A zeal for truth, a love of moderation and order, prudence, and humanity, diſtinguiſhed Principal Carſtairs in an uncommon degree. His religion had no mixture of auſterity; his ſecular tranſactions were attended with no imputation of artifice; and the verſatility of his talents made him paſs with eaſe from a court to a college. He was among the laſt who ſuffered torture before the privy council, in order to make him divulge the ſecrets intruſted to him, which he firmly reſiſted; and after the revolution, that inhuman inſtrument the thumb ſcrew was given to him in a preſent by the council.—This excellent perſon died in 1715; and in 1774 his *State-papers and Letters*, with an account of his life, were publiſhed in one vol. 4to, by the Rev. Dr M'Cormick.

Carſucai || Carte.

CARSUCAI, RAINIER, a Jeſuit, born at Citerna in Tuſcany, in 1647, was the author of a Latin poem, entitled, *Ars bene ſcribendi*, which is eſteemed both for the elegance of the ſtyle and for the excellent precepts it contains. He alſo wrote ſome good epigrams. He died in 1709.

CARTAMA, a town of Spain in the kingdom of Grenada, formerly very conſiderable. It is ſeated at the foot of a mountain, near the river Guadala-Medina, in W. Long. 4. 28. N. Lat. 36. 40.

CART, a land carriage with two wheels, drawn commonly by horſes, to carry heavy goods, &c. from one place to another. The word ſeems formed from the French *charrette*, which ſignifies the ſame, or rather the Latin *carreta*, a diminutive of *carrus*. See CARR.

In London and Weſtminſter carts ſhall not carry more than twelve ſacks of meal, ſeven hundred and fifty bricks, one chaldron of coals, &c. on pain of forfeiting one of the horſes, (6 Geo. I. cap. 6.) By the laws of the city, carr-men are forbidden to ride either on their carts or horſes. They are to lead or drive them on foot through the ſtreets, on the forfeiture of ten ſhillings. (Stat. 1 Geo. I. cap. 57.) Criminals uſed to be drawn to execution on a cart. Bawds and other malefactors are whipped at the cart's tail.

Scripture makes mention of a ſort of carts or drags uſed by the Jews to do the office of threſhing. They were ſupported on low thick wheels, bound with iron, which were rolled up and down on the ſheaves, to break them, and force out the corn. Something of the like kind alſo obtained among the Romans, under the denomination of *plauſtra*, of which Virgil makes mention, (Georg. I.)

> *Tardaque Eleuſinæ matris volventia plauſtra,*
> *Tribulaque, traheæque.*——

On which Servius obſerves, that *trahea* denotes a cart without wheels, and *tribula* a ſort of cart armed on all ſides with teeth, uſed chiefly in Africa for threſhing corn. The Septuagint and St Jerome repreſent theſe carts as furniſhed with ſaws, inſomuch that their ſurface was beſet with teeth. David having taken Rabbah, the capital of the Ammonites, ordered all the inhabitants to be cruſhed to pieces under ſuch carts, moving on wheels ſet with iron teeth; and the king of Damaſcus is ſaid to have treated the Iſraelites of the land of Gilead in the ſame manner.

CART-Bote, in *Law*, ſignifies wood to be employed in making and repairing inſtruments of huſbandry.

CARTS of War, a peculiar kind of artillery anciently in uſe among the Scots. They are thus deſcribed in an act of parliament, A. D. 1456: It is thought ſpeidfull, that the King may requeiſt to certain of the great burrous of the land that are of ony myght, to mak carts of weir, and in ilk cart twa gunnis, and ilk ane to have twa chalmers, with the remnant of the graith that effeirs thereto, and an cunnand man to ſhut thame." By another act, A. D. 1471, the prelates and barons are commanded to provide ſuch carts of war againſt their old enemies the Engliſh.

CARTE, THOMAS, the hiſtorian, was the ſon of Mr Samuel Carte prebendary of Litchfield, and born in 1686. When he was reader in the abbey-church at Bath, he took occaſion in a 30th of January ſermon, 1714, to vindicate Charles I. with reſpect to the Iriſh maſſacre, which drew him into a controverſy with Mr Chandler the diſſenting miniſter; and on the acceſſion of the preſent royal family he refuſed to take the oaths to government, and put on a lay habit. He is ſaid to have acted as a kind of ſecretary to Biſhop Atterbury before his troubles: and in the year 1722, being accuſed of high treaſon, a reward of 1000l. was offered for apprehending him: but Queen Caroline, the great patroneſs of learned men, obtained leave for him to return home in ſecurity. He publiſhed, 1. An edition of Thuanus, in ſeven volumes, folio. 2. The life of the firſt Duke of Ormond, three volumes, folio. 3. The Hiſtory of England, four volumes, folio. 4. A Collection of original Letters and Papers concerning the affairs of England, two volumes octavo; and ſome other works. He died in April 1754. His Hiſtory of England ends in 1654. His deſign was to have brought it down to the Revolution; for which purpoſe he had taken great pains in copying every thing valuable that could be met with in England, Scotland, France, Ireland, &c.—He had (as he himſelf ſays, p. 43. of his Vindication of a full anſwer to a letter from a byſtander), "read abundance of collections relating to the time of King Charles II. and had in his power a ſeries of memoirs from the beginning to the end of that reign; in which all thoſe intrigues and turns at court, at the latter end of that king's life, which Biſhop Burnet, with all his gout for tales of ſecret hiſtory, and all his genius for conjectures, does not pretend to account for, are laid open in the cleareſt and moſt convincing manner by the perſon who was moſt affected by them, and had the beſt reaſon to know them."—At his death, all his papers came into the hands of his widow, who afterwards married Mr Jernegan, a member of the church of Rome. They are now depoſited in the Bodleian library, having been delivered by Mr Jernegan to the univerſity, 1778, for a valuable conſideration. Whilſt they were in this gentleman's poſſeſſion, the earl of Hardwick paid 200l. for the peruſal of them. For a conſideration of 300l. Mr Macpherſon had the uſe of them; and from theſe and other materials compiled his hiſtory and ſtate-papers. Mr Carte was a man of a ſtrong conſtitution and indefatigable application. When the ſtudies of the day were over, he would eat heartily; and in converſation was cheerful and entertaining.

Carte || Cartel Ship.

CARTE-Blanche, a ſort of white paper, ſigned at the bottom with a perſon's name, and ſometimes alſo ſealed with his ſeal, giving another perſon power to ſuperſcribe what conditions he pleaſes. Much like this is the French *blanc ſigne*, a paper without writing, except a ſignature at the bottom, given by contending parties to arbitrators or friends, to fill up with the conditions they judge reaſonable, in order to end the difference.

CARTEL, an agreement between two ſtates for the exchange of their priſoners of war.

CARTEL ſignifies alſo a letter of defiance or a challenge to decide a controverſy either in a tournament or in a ſingle combat. See DUEL.

CARTEL Ship, a ſhip commiſſioned in time of war to exchange the priſoners of any two hoſtile powers; alſo to carry any particular requeſt or propoſal from one to another:

Cartes. another: for this reaſon, the officer who commands her is particularly ordered to carry no cargo, ammunition, or implements of war, except a ſingle gun for the purpoſe of firing ſignals.

CARTES, Rene des, deſcended of an ancient family in Touraine in France, was one of the moſt eminent philoſophers and mathematicians in the 17th century. At the Jeſuits College at La Fleche, he made a very great progreſs in the learned languages and polite literature, and became acquainted with Father Marſenne. His father deſigned him for the army; but his tender conſtitution then not permitting him to expoſe himſelf to ſuch fatigues, he was ſent to Paris, where he launched into gaming, in which he had prodigious ſucceſs. Here Marſenne perſuaded him to return to ſtudy; which he purſued till he went to Holland, in May 1616, where he engaged as a volunteer among the Prince of Orange's troops. While he lay in garriſon at Breda, he wrote a *treatiſe on muſic*, and laid the foundation of ſeveral of his works. He was at the ſiege of Rochelle in 1628; returned to Paris; and, a few days after his return, at an aſſembly of men of learning in the houſe of Monſignor Bagni, the Pope's nuncio, was prevailed upon to explain his ſentiments with regard to philoſophy, when the nuncio urged him to publiſh his ſyſtem. Upon this he went to Amſterdam, and from thence to Francker, where he began his *metaphyſical meditations*, and drew up his *diſcourſe on meteors*. He made a ſhort tour to England; and not far from London, made ſome obſervations concerning the declination of the magnet. He returned to Holland, where he finiſhed his *treatiſe on the world*.

His books made a great noiſe in France; and Holland thought of nothing but diſcarding the old philoſophy, and following his. Voetius being choſen rector of the univerſity of Utrecht, procured his philoſophy to be prohibited, and wrote againſt him; but he immediately publiſhed a vindication of himſelf. In 1647, he took a journey into France, where the king ſettled a penſion of 3000 livres upon him. Chriſtina, queen of Sweden, having invited him into that kingdom, he went thither, where he was received with the greateſt civility by her majeſty, who engaged him to attend her every morning at five o'clock, to inſtruct her in philoſophy, and deſired him to reviſe and digeſt all his writings which were unpubliſhed, and to form a complete body of philoſophy from them. She likewiſe propoſed to allow him a revenue, and to form an academy, of which he was to be the director. But theſe deſigns were broken off by his death in 1650. His body was interred at Stockholm, and 17 years afterwards removed to Paris, where a magnificent monument was erected to him in the church of St Genevive du Mont. The great Dr Halley, in a paper concerning optics, obſerves, that though ſome of the ancients mention refraction as an effect of tranſparent mediums, Des Cartes was the firſt who diſcovered the laws of refraction, and reduced dioptrics to a ſcience. As to his philoſophy, Dr Keill, in his introduction to his examination of Dr Burnet's theory of the earth, ſays, that Des Cartes was ſo far from applying geometry to natural philoſophy, that his whole ſyſtem is one continued blunder on account of his negligence in that point; the laws obſerved by the planets in their revolutions round the ſun not agreeing with his theory of vortices. His philoſophy has accordingly given way to the more accurate diſcoveries and demonſtrations of the Newtonian ſyſtem. Carteſians, Carthage.

CARTESIANS, a ſect of philoſophers, who adhered to the ſyſtem of Des Cartes, founded on the two following principles, the one metaphyſical, the other phyſical. The metaphyſical one is, *I think, therefore I am*: the phyſical principle is, that *nothing exiſts but ſubſtance*. Subſtance he makes of two kinds; the one a ſubſtance that thinks, the other a ſubſtance extended; whence actual thought, and actual extenſion, are the eſſence of ſubſtance.

The eſſence of matter being thus fixed in extenſion, the Carteſians conclude that there is no vacuum nor any poſſibility thereof in nature; but that the univerſe is abſolutely full: mere ſpace is excluded by this principle; becauſe extenſion being implied in the idea of ſpace, matter is ſo too. Upon theſe principles the Carteſians explained mechanically how the world was formed, and how the preſent celeſtial phenomena came to take place. See Astronomy *Index*.

1 When founded.

CARTHAGE, a famed city of antiquity, the capital of Africa Propria; and which, for many years, diſputed with Rome the ſovereignty of the world. According to Velleius Paterculus, this city was built 65, according to Juſtin and Trogus 72, according to others 100 or 140 years before the foundations of Rome were laid. It is on all hands agreed that the Phœnicians were the founders.

The beginning of the Carthaginian hiſtory, like that of all other nations, is obſcure and uncertain. In the 7th year of Pygmalion king of Tyre, his ſiſter Eliſa, or Dido, is ſaid to have fled, with ſome of her companions and vaſſals, from the cruelty and avarice of her brother, who had put to death her huſband Sichæus in order to get poſſeſſion of his wealth.

2 Eliſa, or Dido, eſcapes from her brother.

She firſt touched at the iſland of Cyprus, where ſhe met with a prieſt of Jupiter, who was deſirous of attending her; to which ſhe readily conſented, and fixed the prieſthood in his family. At that time it was a cuſtom in the iſland of Cyprus, for the young women to go on certain ſtated days, before marriage, to the ſea ſide, there to look for ſtrangers, that might poſſibly arrive on their coaſts, in order to proſtitute themſelves for gain, that they might thereby acquire a dowry. Out of theſe the Tyrians ſelected 80, whom they carried along with them. From Cyprus they ſailed directly for the coaſt of Africa; and at laſt ſafely landed in the province called *Africa Propria*, not far from Utica, a Phœnician city of great antiquity. The inhabitants received their countrymen with great demonſtrations of joy, and invited them to ſettle among them. The common fable is, that the Phœnicians impoſed upon the Africans in the following manner: They deſired, for their intended ſettlement, only as much ground as an ox's hide would encompaſs. This requeſt the Africans laughed at: but were ſurpriſed, when, upon their granting it, they ſaw Eliſa cut the hide into the ſmalleſt ſhreds, by which means it ſurrounded a large territory; in which ſhe built the citadel called *Byrſa*. The learned, however, are now unanimous in exploding this fable: and it is certain that the Carthaginians for many years paid an annual tribute to the Africans for the ground they poſſeſſed.

3 Builds the citadel Byrſa.

The new city ſoon became populous and flouriſhing, by

Carthage. by the acceſſion of the neighbouring Africans, who came thither at firſt with a view of traffic. In a ſhort time it became ſo conſiderable, that *Jarbas*, a neighbouring prince, thought of making himſelf maſter of it without any effuſion of blood. In order to this, he deſired that an embaſſy of ten of the moſt noble Carthaginians might be ſent him; and, upon their arrival, propoſed to them a marriage with Dido, threatening war in caſe of a refuſal. The ambaſſadors, being afraid to deliver this meſſage, told the queen that Jarbas deſired ſome perſon might be ſent him who was capable of civilizing his Africans; but that there was no poſſibility of finding any of her ſubjects who would leave his relations for the converſation of ſuch barbarians. For this they were reprimanded by the queen; who told them that they ought to be aſhamed of refuſing to live in any manner for the benefit of their country. Upon this, they informed her of the true nature of their meſſage from Jarbas; and that, according to her own deciſion, ſhe ought to ſacrifice

4 She kills herſelf. herſelf for the good of her country. The unhappy queen, rather than ſubmit to be the wife of ſuch a barbarian, cauſed a funeral pile to be erected, and put an end to her life with a dagger.

This is Juſtin's account of the death of Queen Dido, and is the moſt probable; Virgil's ſtory of her amour with Æneas being looked upon as fabulous, even in the days of Macrobius, as we are informed by that hiſtorian. How long monarchical government continued in Carthage, or what happened to this ſtate in its infancy, we are altogether ignorant, by reaſon of the Punic archives being deſtroyed by the Romans; ſo that there is a chaſm in the Carthaginian hiſtory for above 300 years. It, however, appears, that from the very beginning, the Carthaginians applied themſelves to maritime affairs, and were formidable by ſea

5 Spaniſh mines of vaſt ſervice to the Carthaginians. in the time of Cyrus and Cambyſes. From Diodorus Siculus and Juſtin, it appears that the principal ſupport of the Carthaginians were the mines of Spain, in which country they ſeem to have eſtabliſhed themſelves very early. By means of the riches drawn from theſe mines, they were enabled to equip ſuch formidable fleets as we are told they fitted out in the time of Cyrus or Cambyſes. Juſtin inſinuates, that the firſt Carthaginian ſettlement in Spain happened when the city of Gades, now Cadiz, was but of late ſtanding, or even in its infancy. The Spaniards finding this new colony begin to flouriſh, attacked it with a numerous army, inſomuch that the inhabitants were obliged to call in the Carthaginians to their aid. The latter very readily granted their requeſt, and not only repulſed the Spaniards, but made themſelves maſters of almoſt the whole province in which their new city ſtood. By this ſucceſs, they were encouraged to attempt the conqueſt of the whole country: but having to do with very warlike nations, they could not puſh their conqueſts to any great length at firſt; and it appears from the accounts of Livy and Polybius, that the greateſt part of Spain remained unſubdued till the time of Hamilcar, Aſdrubal, and Hannibal.

6 Firſt treaty between Carthage and Rome. About 503 years before the birth of Chriſt, the Carthaginians entered into a treaty with the Romans. It related chiefly to matters of navigation and commerce. From it we learn, that the whole iſland of Sardinia, and part of Sicily, were then ſubject to Carthage; that they were very well acquainted with Carthage. the coaſts of Italy, and had made ſome attempts upon them before this time: and that, even at this early period, a ſpirit of jealouſy had taken place between the two republics. Some time near this period, the Carthaginians had a mind to diſcontinue the tribute they had hitherto paid the Africans for the ground on which their city ſtood. But, notwithſtanding all their power, they were at preſent unſucceſsful; and at laſt were obliged to conclude a peace, one of the articles of which was, that the tribute ſhould be continued.

7 Sicily invaded by the Carthaginians. By degrees the Carthaginians extended their power over all the iſlands in the Mediterranean, Sicily excepted; and for the entire conqueſt of this, they made vaſt preparations, about 480 years before Chriſt. Their army conſiſted of 300,000 men; their fleet was compoſed of upwards of 2000 men of war, and 3000 tranſports; and with ſuch an immenſe armament, they made no doubt of conquering the whole iſland in a ſingle campaign. In this, however, they found themſelves miſerably deceived. Hamilcar their general having landed his numerous forces, inveſted Himera, a city of conſiderable importance. He carried on his attacks with the greateſt aſſiduity; but was at laſt attacked in his trenches by Gelon and Theron, the tyrants of Syracuſe and Agrigentum, who gave the Carthaginians one of the greateſt overthrows mentioned in hiſtory. An hundred and fifty thouſand were

8 They are utterly deſtroyed. killed in the battle and purſuit, and all the reſt taken priſoners; ſo that of ſo mighty an army not a ſingle perſon eſcaped. Of the 2000 ſhips of war and 3000 tranſports, of which the Carthaginian fleet conſiſted, eight ſhips only, which then happened to be out at ſea, made their eſcape: theſe immediately ſet ſail for Carthage; but were all caſt away, and every ſoul periſhed, except a few who were ſaved in a ſmall boat, and at laſt reached Carthage with the diſmal news of the total loſs of the fleet and army. No words can expreſs the conſternation of the Carthaginians upon receiving the news of ſo terrible a diſaſter. Ambaſſadors were immediately diſpatched to Sicily, with orders to conclude a peace upon any terms. They put to ſea without delay; and landing at Syracuſe,

9 Peace concluded. threw themſelves at the conqueror's feet. They begged Gelon, with many tears, to receive their city into favour, and grant them a peace on whatever terms he ſhould chooſe to preſcribe. He granted their requeſt, upon condition that Carthage ſhould pay him 2000 talents of ſilver to defray the expences of the war; that they ſhould build two temples, where the articles of the treaty ſhould be lodged and kept as ſacred; and that for the future they ſhould abſtain from human ſacrifices. This was not thought a dear purchaſe of a peace for which there was ſuch occaſion; and to ſhow their gratitude for Gelon's moderation, the Carthaginians complimented his wife Demarata with a crown of gold worth 100 talents.

From this time we find little mention of the Carthaginians for 70 years. Some time during this period, however, they had greatly extended their dominions in Africa, and likewiſe ſhaken off the tribute

10 Diſpute with the Cyreneans. which gave them ſo much uneaſineſs. They had warm diſputes with the inhabitants of Cyrene the capital of Cyrenaica, about a regulation of the limits of

Carthage. of their reſpective territories. The conſequence of theſe diſputes was a war, which reduced both nations ſo low, that they agreed firſt to a ceſſation of arms, and then to a peace. At laſt it was agreed, that each ſtate ſhould appoint two commiſſaries, who ſhould ſet out from their reſpective cities on the ſame day, and that the ſpot on which they met ſhould be the boundary of both ſtates. In conſequence of this, two brothers called *Philæni* were ſent out from Carthage, who advanced with great celerity, while thoſe from Cyrene were much more ſlow in their motions. Whether this proceeded from accident or deſign, or perfidy, we are not certainly informed; but, be this as it will, the Cyreneans finding themſelves greatly outſtripped by the Philæni, accuſed them of breach of faith, aſſerting that they had ſet out before the time appointed, and conſequently that the convention between their principals was broken. The Philæni deſired them to propoſe ſome expedient whereby their differences might be accommodated; promiſing to ſubmit to it whatever it might be. The Cyreneans then propoſed, either that the Philæni ſhould retire from the place where they were, or that they ſhould be buried alive upon the ſpot. With this laſt condition the brothers immediately complied, and by their death gained a large extent of territory to the country. The Carthaginians ever after celebrated this as a moſt brave and heroic action; paid them divine honours; and endeavoured to immortalize their names by erecting two altars there, with ſuitable inſcriptions upon them.

11 Story of the *Philæni.*

12 Sicily invaded anew. About the year before Chriſt 412, ſome diſputes happening between the Egeſtines and Selinuntines, inhabitants of two cities in Sicily, the former called in the Carthaginians to their aſſiſtance; and this occaſioned a new invaſion of Sicily by that nation. Great preparations were made for this war; Hannibal, whom they had appointed general, was empowered to raiſe an army equal to the undertaking, and equip a ſuitable fleet. They alſo appointed certain funds for defraying all the expences of the war, intending to exert their whole force to reduce the iſland under their ſubjection.

13 Emporium and Selinis taken; The Carthaginian general having landed his forces, immediately marched for Selinis. In his way he took Emporium, a town ſituated on the river Mazara; and having arrived at Selinis, he immediately inveſted it. The beſieged made a very vigorous defence; but at laſt the city was taken by ſtorm, and the inhabitants were treated with the utmoſt cruelty. All were maſſacred by the ſavage conqueror, except the women who fled to the temples: and theſe eſcaped, not through the merciful diſpoſition of the Carthaginians, but becauſe they were afraid, that if driven to deſpair they would ſet fire to the temples, and by that means conſume the treaſure they expected to find in thoſe places. Sixteen thouſand were maſſacred; 2250 eſcaped to Agrigentum; and the women and children, about 5000 in number, were carried away captives. At the ſame time the temples were plundered, and the city razed to the ground.

14 as likewiſe Himera. After the reduction of Selinis, Hannibal laid ſiege to Himera: that city he deſired above all things to become maſter of, that he might revenge the death of his grandfather Hamilcar, who had been ſlain before it by Gelon. His troops, flushed with their late ſucceſs, behaved with undaunted courage: but finding his battering engines not to anſwer his purpoſe ſufficiently, he undermined the wall, ſupporting it with large beams of timber, to which he afterwards ſet fire, and thus laid part of it flat on the ground. Notwithſtanding this advantage, however, the Carthaginians were ſeveral times repulſed with great ſlaughter; but at laſt they became maſters of the place, and treated it in the ſame manner as they had done Selinis. After this, Hannibal, diſmiſſing his Sicilian and Italian allies, returned to Africa. Carthage.

The Carthaginians were now ſo much elated, that they meditated the reduction of the whole iſland. But as the age and infirmities of Hannibal rendered him incapable of commanding the forces alone, they joined in commiſſion with him Imilcar, the ſon of Hanno, one of the ſame family. On the landing of the Carthaginian army, all Sicily was alarmed, and the principal cities put themſelves into the beſt ſtate of defence they were able. The Carthaginians immediately marched to Agrigentum, and began to batter the walls with great fury. The beſieged, however, defended themſelves with incredible reſolution, in a ſally burnt all the machines raiſed againſt their city, and repulſed the enemy with great ſlaughter. The Syracuſans, in the mean time, being alarmed at the danger of Agrigentum, ſent an army to its relief. On their approach they were immediately attacked by the Carthaginians; but after a ſharp diſpute the letter were defeated, and forced to fly to the very walls of Agrigentum, with the loſs of 6000 men. Had the Agrigentine commanders now ſallied out, and fallen upon the fugitives, in all probability the Carthaginian army muſt have been deſtroyed; but either through fear or corruption, they refuſed to ſtir out of the place, and this occaſioned the loſs of it. Immenſe booty was found in the city; and the Carthaginians behaved with their uſual cruelty, putting all the inhabitants to the ſword, not excepting even thoſe who had fled to the temples.

15 Agrigentum beſieged; 16 and taken.

The next attempt of the Carthaginians was deſigned againſt the city of Gela: but the Geleans, being greatly alarmed, implored the protection of Syracuſe; and, at their requeſt, Dionyſius was ſent to aſſiſt them with 2000 foot and 400 horſe. The Geleans were ſo well ſatisfied with his conduct, that they treated him with the higheſt marks of diſtinction; they even ſent ambaſſadors to Syracuſe to return thanks for the important ſervices done them by ſending him thither; and ſoon after he was appointed generaliſſimo of the Syracuſan forces and thoſe of their allies againſt the Carthaginians. In the mean time Imilcar, having razed the city of Agrigentum, made an incurſion into the territories of Gela and Comarina; which having ravaged in a dreadful manner, he carried off ſuch immenſe quantity of plunder, as filled his whole camp. He then marched againſt the city: but though it was but indifferently fortified, he met with a very vigorous reſiſtance; and the place held out for a long time without receiving any aſſiſtance from its allies. At laſt Dionyſius came to its aſſiſtance with an army of 50,000 foot and 1000 horſe. With theſe he attacked the Carthaginian camp, but was repulſed with great loſs; after which, he called a council of war, the reſult of whoſe deliberations was, that ſince the enemy

17 Gela beſieged.

Carthage. was ſo much ſuperior to them in ſtrength, it would be highly imprudent to put all to the iſſue of a battle; and therefore, that the inhabitants ſhould be perſuaded to abandon the country, as the only means of ſaving their lives. In conſequence of this, a trumpet was ſent to Imilcar to deſire a ceſſation of arms till the next day, in order, as was pretended, to bury the dead, but in reality to give the people of Gela an opportunity of making their eſcape. Towards the beginning of the night the bulk of the citizens left the place; and he himſelf with the army followed them about midnight. To amuſe the enemy, he left 2000 of his light-armed troops behind him, commanding them to make fires all night, and ſet up loud ſhouts as though the army ſtill remained in town. At day-break theſe took the ſame route as their companions, and purſued their march with great celerity. The Carthaginians, finding the city deſerted by the greateſt part of its inhabitants, immediately entered it, putting to death all who had remained; after which, Imilcar having thoroughly plundered it, moved towards Camarina. The inhabitants of this city had been likewiſe drawn off by Dionyſius, and it underwent the ſame fate with Gela.

18 Abandoned by its inhabitants.

19 Peace concluded.

Notwithſtanding theſe ſucceſſes, however, Imilcar finding his army greatly weakened, partly by the caſualties of war, and partly by a plague which broke out in it, ſent a herald to Syracuſe to offer terms of peace. His unexpected arrival was very agreeable to the Syracuſans, and a peace was immediately concluded upon the following terms, viz. That the Carthaginians, beſides their ancient acquiſitions in Sicily, ſhould ſtill poſſeſs the countries of the Silicani, the Selinuntines, the Himereans, and Agrigentines; that the people of Gela and Camarina ſhould be permitted to reſide in their reſpective cities, which yet ſhould be diſmantled, upon their paying an annual tribute to the Carthaginians; that all the other Sicilians ſhould preſerve their independency except the Syracuſans, who ſhould continue in ſubjection to Dionyſius.

20 Dionyſius breaks the treaty.

The tyrant of Syracuſe, however, had concluded this peace with no other view than to gain time, and to put himſelf in a condition to attack the Carthaginian territories with greater force. Having accompliſhed this, he acquainted the Syracuſans with his deſign, and they immediately approved of it; upon which he gave up to the fury of the populace the perſons and poſſeſſions of the Carthaginians who reſided in Syracuſe, and traded there on the faith of treaties. As there were many of their ſhips at that time in the harbour, laden with cargoes of great value, the people immediately plundered them; and, not content with this, ranſacked all their houſes in a moſt outrageous manner. This example was followed throughout the whole iſland; and in the mean time Dionyſius diſpatched a herald to Carthage, with a letter to the ſenate and people, telling them, that if they did not immediately withdraw their garriſons from all the Greek cities in Sicily, the people of Syracuſe would treat them as enemies. With this demand, however, he did not allow them to comply; for without waiting for any anſwer from Carthage, he advanced with his army to Mount Eryx, near which ſtood the city of Motya, a Carthaginian colony of great importance; and this he immediately inveſted. But ſoon after, leaving his brother Leptines to carry on the attacks, he himſelf went with the greateſt part of his forces to reduce the cities in alliance with the Carthaginians. He deſtroyed their territories with fire and ſword, cut down all their trees; and then he ſat down before Egeſta and Entella, moſt of the other towns having opened their gates at his approach: but theſe baffling his utmoſt efforts, he returned to Motya, and puſhed on the ſiege of that place with the utmoſt vigour.

Carthage.

The Carthaginians, in the mean time, though alarmed at the meſſage ſent them by Dionyſius, and though reduced to a miſerable ſituation by the plague which had broke out in their city, did not deſpond, but ſent officers to Europe, with conſiderable ſums, to raiſe troops with the utmoſt diligence. Ten galleys were alſo ſent from Carthage to deſtroy all the ſhips that were found in the harbour of Syracuſe. The admiral, according to his orders, entered the harbour in the night, without being diſcerned by the enemy; and having ſunk moſt of the ſhips he found there, returned without the loſs of a man.

Syracuſan ſhips deſtroyed.

22 Motya taken by the Greeks.

All this while the Motyans defended themſelves with incredible vigour; while their enemies, deſirous of revenging the cruelties exerciſed upon their countrymen by the Carthaginians, fought like lions. At laſt the place was taken by ſtorm, and the Greek ſoldiers began a general maſſacre. For ſome time Dionyſius was not able to reſtrain their fury: but at laſt he proclaimed that the Motyans ſhould fly to the Greek temples; which they accordingly did, and a ſtop was put to the ſlaughter; but the ſoldiers took care thoroughly to plunder the town, in which they found a great treaſure.

The following ſpring, Dionyſius invaded the Carthaginian territories, and made an attempt upon Egeſta: but here he was again diſappointed. The Carthaginians were greatly alarmed at his progreſs; but, next year, notwithſtanding a conſiderable loſs ſuſtained in a ſea-fight with Leptines, Himilco their general landed a powerful army at Panormus, ſeized upon Eryx, and then advancing towards Motya, made himſelf maſter of it, before Dionyſius could ſend any forces to its relief. He next advanced to Meſſana, which he likewiſe beſieged and took; after which moſt of the Siculi revolted from Dionyſius.

32 Greeks defeated at ſea by the Carthaginians.

Notwithſtanding this defection, Dionyſius, finding his forces ſtill amount to 30,000 foot and 3000 horſe, advanced againſt the enemy. At the ſame time Leptines was ſent with the Syracuſan fleet againſt that of the Carthaginians, but with poſitive orders not to break the line of battle upon any account whatever. But, notwithſtanding theſe orders, he thought proper to divide his fleet, and the conſequence of this was a total defeat; above 100 of the Syracuſan galleys being ſunk or taken, and 20,000 of their men killed in the battle or in the purſuit. Dionyſius, diſheartened by this misfortune, returned with his army to Syracuſe, being afraid that the Carthaginian fleet might become maſters of that city, if he ſhould advance to fight the land army. Himilco did not fail immediately to inveſt the capital; and had certainly become maſter of it, and conſequently of the whole iſland, had not a moſt malignant peſtilence obliged him to deſiſt from all further operations. This dreadful malady made great havoc among his forces both by ſea and land; and to complete

24 Syracuſe beſieged by the Carthaginians.

Carthage. plete his misfortunes, Dionyſius attacked him unexpectedly, totally ruined his fleet, and made himſelf maſter of his camp.

25 Himilco obliged to return. Himilco, finding himſelf altogether unable to ſuſtain another attack, was obliged to come to a private agreement with Dionyſius; who for 300 talents conſented to let him eſcape to Africa, with the ſhattered remains of his fleet and army. The unfortunate general arrived at Carthage, clad in mean and ſordid attire, where he was met by a great number of people bewailing their ſad and inauſpicious fortune. Himilco joined them in their lamentations; and being unable to ſurvive his misfortunes, put an end to his own life. He had left Mago in Sicily, to take care of the Carthaginian intereſts in the beſt manner he could. In order to this, Mago treated all the Sicilians ſubject to Carthage with the greateſt humanity; and having received a conſiderable number of ſoldiers from Africa, he at laſt formed an army with which he ventured a battle; in this he was defeated, and driven out of the field, with the loſs of 800 men, which obliged him to deſiſt from farther attempts of that nature.

26 Another invaſion of Sicily. Notwithſtanding all theſe terrible diſaſters, the Carthaginians could not forbear making new attempts upon the iſland of Sicily; and about the year before Chriſt 392, Mago landed in it with an army of 80,000 men. This attempt, however, was attended with no better ſucceſs than before; Dionyſius found means to reduce him to ſuch ſtraits for want of proviſions, that he was obliged to ſue for peace. This continued for nine years, at the end of which the war was renewed with various ſucceſs. It continued with little interruption till the year before Chriſt 367, when the Syracuſan ſtate being rent by civil diſſenſions, the Carthaginians thought it a proper time to exert themſelves, in order to become maſters of the whole iſland. They fitted out a great fleet, and entered into alliance with Icetas, tyrant of Leontini, who pretended to have taken Syracuſe under his protection. By this treaty, the two powers engaged to aſſiſt each other, in order to expel Dionyſius II. after which they were to divide

27 Syracuſans aſſiſted by the Corinthians. the iſland between them. The Syracuſans applied for ſuccours to the Corinthians: and they readily ſent them a body of troops under the command of Timoleon an experienced general. By a ſtratagem, he got his forces landed at Taurominium. The whole of them did not exceed 1200 in number: yet with theſe he marched againſt Icetas, who was at the head of 5000 men: his army he ſurpriſed at ſupper, put 300 of them to the ſword, and took 600 priſoners. He then marched to Syracuſe, and broke into one part of the town before the enemy had any notice of his approach: here he took poſt, and defended himſelf with ſuch reſolution, that he could not be diſlodged by the united power of Icetas and the Carthaginians.

28 Fooliſh conduct of the Carthaginian admiral. In this place he remained for ſome time, in expectation of a reinforcement from Corinth; till the arrival of which, he did not judge it practicable to extend his conqueſts.—The Carthaginians being appriſed that the Corinthian ſuccours were detained by tempeſtuous weather at Thurium, poſted a ſtrong ſquadron, under Hanno their admiral, to intercept them in their paſſage to Sicily. But that commander, not imagining the Corinthians would attempt a paſſage to Sicily in ſuch a ſtormy ſeaſon, left his ſtation at Thurium, and Carthage. ordering his ſeamen to crown themſelves with garlands, and adorn their veſſels with bucklers both of the Greek and Carthaginian form, ſailed to Syracuſe in a triumphant manner. Upon his arrival there, he gave the troops in the citadel to underſtand, that he had taken the ſuccours Timoleon expected, thinking by this means to intimidate them to ſurrender. But, while he thus trifled away his time, the Corinthians marched with great expedition to Rhegium, and, taking the advantage of a gentle breeze, were eaſily wafted over into Sicily. Mago, the Carthaginian general, was no ſooner informed of the arrival of this reinforcement, than he was ſtruck with terror, though the whole Corinthian army did not exceed 4000 men; and, ſoon after, fearing a revolt of his mercenaries, he weighed anchor, in ſpite of all the remonſtrances of Icetas, and ſet ſail for Africa. Here he no ſooner arrived, than, overcome with grief and ſhame for his unparalleled cowardice, he laid violent hands on himſelf. His body was hung upon a gallows or croſs, in order to deter ſucceeding generals from forfeiting their honour in ſo flagrant a manner.

29 Cowardice of Mago.

30 Exploits of Timoleon. After the flight of Mago, Timoleon carried all before him. He obliged Icetas to renounce his alliance with the ſtate of Carthage, and even depoſed him, and continued his military preparations with the greateſt vigour. On the other hand, the Carthaginians prepared for the enſuing campaign with the greateſt alacrity. An army of 70,000 men was ſent over, with a fleet of 200 ſhips of war, and 1000 tranſports laden with warlike engines, armed chariots, horſes, and all other ſorts of proviſions. This immenſe multitude, however, was overthrown on the banks of the Crimeſus by Timoleon: 10,000 were left dead on the field of battle; and of theſe above 3000 were native Carthaginians of the beſt families in the city. Above 15,000 were taken priſoners; all their baggage and proviſions, with 200 chariots, 1000 coats of mail, and 10,000 ſhields, fell into Timoleon's hands. The ſpoil, which conſiſted chiefly of gold and ſilver, was ſo immenſe, that the whole Sicilian army was three days in collecting it and ſtripping the ſlain. After this ſignal victory, he left his mercenary forces upon the frontiers of the enemy, to plunder and ravage the country; while he himſelf returned to Syracuſe with the reſt of his army, where he was received with the greateſt demonſtrations of joy. Soon after, Icetas, grown weary of his private ſtation, concluded a new peace with the Carthaginians; and having aſſembled an army, ventured an engagement with Timoleon: but in this he was utterly defeated; and himſelf, with Eupolemus his ſon, and Euthymus general of his horſe, were brought bound to Timoleon by their own ſoldiers. The two firſt were immediately executed as tyrants and traitors, and the laſt murdered in cold blood; Icetas's wives and daughters were likewiſe cruelly put to death after a public trial. In a ſhort time after, Mamercus, another of the Carthaginian confederates, was overthrown by Timoleon, with the loſs of 2000 men.

31 Peace concluded. Theſe misfortunes induced the Carthaginians to conclude a peace on the following terms: That all the Greek cities ſhould be ſet free; that the river Halycus ſhould be the boundary between the territories of both parties; that the natives of the cities, ſubject to the Carthaginians,

Carthage. Carthaginians, ſhould be allowed to withdraw, if they pleaſed, to Syracuſe, or its dependencies, with their families and effects; and laſtly, that Carthage ſhould not, for the future, give any aſſiſtance to the remaining tyrants againſt Syracuſe.

32 War renewed. About 316 years before Chriſt, we find the Carthaginians engaged in another bloody war with the Sicilians, on the following occaſion: Soſiſtratus, who had uſurped the ſupreme authority at Syracuſe, having been forced by Agathocles to raiſe the ſiege of Rhegium, returned with his ſhattered troops to Sicily. But ſoon after this unſucceſsful expedition he was obliged to abdicate the ſovereignty and quit Syracuſe. With him were expelled above 600 of the principal citizens, who were ſuſpected of having formed a deſign to overturn the plan of government which then prevailed in the city. As Soſiſtratus and the exiles thought themſelves ill treated, they had recourſe to the Carthaginians, who readily eſpouſed their cauſe. Hereupon the Syracuſans having recalled Agathocles, who had before been baniſhed by Soſiſtratus, appointed him commander in chief of all their forces, principally on account of the known averſion he bore that tyrant. The war, however, did not then continue long; for Soſiſtratus and the exiles were quickly received again into the city, and peace was concluded with Carthage: the people of Syracuſe, however, finding that Agathocles wanted to make himſelf abſolute, exacted an oath from him, that he would do nothing to the prejudice of the democracy. But, notwithſtanding this oath, Agathocles purſued his purpoſe, and by a general maſſacre of the principal citizens of Syracuſe raiſed himſelf to the throne. For ſome time he was obliged to keep the peace he had concluded with Carthage; but at laſt finding his authority eſtabliſhed, and that his ſubjects were ready to ſecond his ambitious deſigns, he paid no regard to his treaties, but immediately made war on the neighbouring ſtates, which he had expreſsly agreed not to do, and then carried his arms into the very heart of the iſland. In theſe expeditions he was attended with ſuch ſucceſs, that in two years time he brought into ſubjection all the Greek part of Sicily. This being accompliſhed, he committed great devaſtations in the Carthaginian territories, their general Hamilcar not offering to give him the leaſt diſturbance. This perfidious conduct greatly incenſed the people of thoſe diſtricts againſt Hamilcar, whom they accuſed before the ſenate. He died, however, in Sicily; and Hamilcar the ſon of Giſco was appointed to ſucceed him in the command of the forces. The laſt place that held out againſt Agathocles was Meſſana, whither all the Syracuſan exiles had retired. Paſiphilus, Agathocles's general, found means to cajole the inhabitants into a treaty; which Agathocles, according to cuſtom, paid no regard to, but, as ſoon as he was in poſſeſſion of the town, cut off all thoſe who had oppoſed his government. For, as he intended to proſecute the war with the utmoſt vigour againſt Carthage, he thought it a point of good policy to deſtroy as many of his Sicilian enemies as poſſible.

33 Agathocles raiſes himſelf to the throne of Syracuſe.

34 Defeated by the Carthaginians, and beſieged in Syracuſe. The Carthaginians in the mean time having landed a powerful army in Sicily, an engagement ſoon enſued, in which Agathocles was defeated with the loſs of 7000 men. After this defeat he was obliged to ſhut himſelf up in Syracuſe, which the Carthaginians immediately inveſted, and moſt of the Greek ſtates in the iſland ſubmitted to them. Carthage.

Agathocles ſeeing himſelf ſtripped of almoſt all his dominions, and his capital itſelf in danger of falling into the hands of the enemy, formed a deſign, which, were it not atteſted by writers of undoubted authority, would ſeem abſolutely incredible. This was no leſs than to transfer the war into Africa, and lay ſiege to the enemy's capital, at a time when he himſelf was beſieged, and only one city left to him in all Sicily. Before he departed, however, he made all the neceſſary preparations for the defence of the place, and appointed his brother Antandrus governor of it. He alſo gave permiſſion to all who were not willing to ſtand the fatigues of a ſiege to retire out of the city. Many of the principal citizens, Juſtin ſays 1600, accepted of this offer; but they were no ſooner got out of the place, than they were cut off by parties poſted on the road for that purpoſe. Having ſeized upon their eſtates, Agathocles raiſed a conſiderable ſum, which was intended in ſome meaſure to defray the expence of the expedition: however, he carried with him only 50 talents to ſupply his preſent wants, being well aſſured that he ſhould find in the enemy's country whatever was neceſſary for his ſubſiſtence. As the Carthaginians had a much ſuperior fleet, they for ſome time kept the mouth of the harbour blocked up: but at laſt a fair opportunity offered; and Agathocles hoiſting ſail, by the activity of his rowers ſoon got clear both of the port and city of Syracuſe. The Carthaginians purſued him with all poſſible expedition; but, notwithſtanding their utmoſt efforts, Agathocles got his troops landed with very little oppoſition.

35 He invades Africa.

Soon after his forces were landed, Agathocles burnt his fleet, probably that his ſoldiers might behave with the greater reſolution, as they ſaw no poſſibility of flying from their danger. He firſt advanced to a place called the Great City. This, after a feeble reſiſtance, he took and plundered. From hence he marched to Tunis, which ſurrendered on the firſt ſummons; and Agathocles levelled both places with the ground.

36 He burns his fleet.

The Carthaginians were at firſt thrown into the greateſt conſternation; but ſoon recovering themſelves, the citizens took up arms with ſo much alacrity, that in a few days they had on foot an army of 40,000 foot and 1000 horſe, with 2000 armed chariots. The command of this army they entruſted to Hanno and Bomilcar, two generals between whom there ſubſiſted a great animoſity. This occaſioned the defeat of their whole army, with the loſs of their camp, though all the forces of Agathocles did not exceed 14,000 in number. Among other rich ſpoils the conqueror found many chariots of curious workmanſhip, which carried 20,000 pair of fetters and manacles that the enemy had provided for the Sicilian priſoners. After this defeat, the Carthaginians, ſuppoſing themſelves to have fallen under the diſpleaſure of their deities on account of their neglecting to ſacrifice children of noble families to them, reſolved to expiate this guilt. Accordingly 200 children of the firſt rank were ſacrificed to their bloody gods, beſides 300 other perſons who voluntarily offered themſelves to pacify the wrath of theſe deities.

37 Carthaginians defeated.

38 Their method of appeaſing their deities.

After theſe expiations, Hamilcar was recalled from

Carthage.

Sicily. When the meſſengers arrived, Hamilcar commanded them not once to mention the victory of Agathocles; but, on the contrary, to give out among the troops that he had been entirely defeated, his forces all cut off, and his fleet deſtroyed by the Carthaginians. This threw the Syracuſans into the utmoſt deſpair; however, one Eurymnon, an Etolian, prevailed upon Antandrus not to conſent to a capitulation, but to ſtand a general aſſault. Hamilcar being informed of this, prepared his battering engines, and made all the neceſſary preparations to ſtorm the town without delay. But while matters remained in this ſituation, a galley, which Agathocles had cauſed to be built immediately after the battle, got into the harbour of Syracuſe, and acquainted the inhabitants with the certainty of Agathocles's victory. Hamilcar obſerving that the garriſon flocked down to the port on this occaſion, and expecting to find the walls unguarded, ordered his ſoldiers to erect ſcaling-ladders, and begin the intended aſſault. The enemy having left the ramparts quite expoſed, the Carthaginians mounted them without being diſcerned, and had almoſt poſſeſſed themſelves of an entire part lying between two towers, when the patrol diſcovered them. Upon this a warm diſpute enſued; but at laſt the Carthaginians were repulſed with loſs. Hamilcar, therefore, finding it in vain to continue the ſiege after ſuch glad tidings had reſtored life and ſoul to the Syracuſans, drew off his forces, and ſent a detachment of 5000 men to reinforce the troops in Africa. He ſtill entertained hopes, however, that he might oblige Agathocles to quit Africa, and return to the defence of his own dominions. He ſpent ſome time in making himſelf maſter of ſuch cities as ſided with the Syracuſans; and after having brought all their allies under ſubjection, returned again to Syracuſe, hoping to ſurpriſe it by an attack in the night-time. But being attacked while advancing through narrow paſſes, where his numerous army had not room to act, he was defeated with great ſlaughter, and himſelf taken priſoner, carried into Syracuſe, and put to death.

39 Hamilcar makes an aſſault on Syracuſe.

40 He raiſes the ſiege.

41 Is defeated, and taken priſoner, and put to death.

In the mean time the Agrigentines, finding that the Carthaginians and Syracuſans had greatly weakened each other by this war, thought it a proper opportunity to attempt the ſovereignty of the whole iſland. They therefore commenced a war againſt both parties; and proſecuted it with ſuch ſucceſs, that in a ſhort time they wreſted many places of note both out of the hands of the Syracuſans and Carthaginians.

42 Agrigentines attempt the ſovereignty of Sicily.

In Africa the tyrant carried every thing before him. He reduced moſt of the places of any note in the territory of Carthage; and hearing that Elymas king of Libya had declared againſt him, he immediately entered Libya Superior, and in a great battle overthrew that prince, putting to the ſword a good part of his troops, and the general who commanded them; after which he advanced againſt the Carthaginians with ſuch expedition, that he ſurpriſed and defeated them with the loſs of 2000 killed, and a great number taken priſoners. He next prepared for the ſiege of Carthage itſelf; and in order thereto advanced to a poſt within five miles of that city. On the other hand, notwithſtanding the great loſſes they had already ſuſtained, the Carthaginians, with a powerful army, encamped between him and their capital. In this ſituation Agathocles received advice of the defeat of the Carthaginian forces before Syracuſe, and the head of Hamilcar their general. Upon this he immediately rode up to the enemy's camp, and ſhowing them the head, gave them an account of the total deſtruction of their army before Syracuſe. This threw them into ſuch conſternation, that in all human probability Agathocles would have made himſelf maſter of Carthage, had not an unexpected mutiny ariſen in his camp, which gave the Carthaginians an opportunity of recovering from their terror.

43 Succeſs of Agathocles in Africa.

Carthage.

The year following an engagement happened, in which neither party gained any great advantage: but ſoon after, the tyrant, notwithſtanding all his victories, found himſelf unable to carry on the war alone; and therefore endeavoured to gain over to his intereſt Ophellas, one of the captains of Alexander the Great. In this he perfectly ſucceeded; and to ſuccour his new ally the more effectually, Ophellas ſent to Athens for a body of troops. Having finiſhed his military preparations, Ophellas found his army to conſiſt of 10,000 foot and 600 horſe, all regular troops, beſides 100 chariots, and a body of 10,000 men, attended by their wives and children, as though he had been going to plant a new colony. At the head of theſe forces he continued his march towards Agathocles for 18 days; and then encamped at Automalæ, a city about 3000 ſtadia diſtant from the capital of his dominions. From thence he advanced through the Regio Syrtica; but found himſelf reduced to ſuch extremities, that his army was in danger of periſhing for want of bread, water, and other proviſions. They were alſo greatly annoyed by ſerpents and wild beaſts, with which that deſert region abounded. The ſerpents made the greateſt havock among the troops; for, being of the ſame colour with the earth, and extremely venomous, many ſoldiers, who trod upon them without ſeeing them, were ſtung to death. At laſt, after a very fatiguing march of two months, he approached Agathocles, and encamped at a ſmall diſtance from him, to the no ſmall terror of the Carthaginians, who apprehended the moſt fatal conſequences from this junction. Agathocles at firſt careſſed him, and adviſed him to take all poſſible care of his troops that had undergone ſo many fatigues; but ſoon after cut him off by treachery, and then by fair words and promiſes perſuaded his troops to ſerve under himſelf.

44 He makes an alliance with Ophellas;

45 whom he treacherouſly murders.

Agathocles now finding himſelf at the head of a numerous army, aſſumed the title of King of Africa, intending ſoon to complete his conqueſts by the reduction of Carthage. He began with the ſiege of Utica, which was taken by aſſault. After this he marched againſt Hippo Diarrhytus, the Biſerta of the moderns, which was alſo taken by ſtorm; and after this moſt of the people bordering upon the ſea coaſts, and even thoſe who inhabited the inland parts of the country, ſubmitted to him. But in the midſt of this career of ſucceſs, the Sicilians formed an aſſociation in favour of liberty; which obliged the tyrant to return home, leaving his ſon Archagathus to carry on the war in Africa.

46 Is obliged to return home.

Archagathus, after his father's departure, greatly extended the African conqueſts. He ſent Eumachus at the head of a large detachment to invade ſome of the neighbouring provinces, while he himſelf, with the

47 Succeſs of Archagathus.

Carthage. the greateſt part of his army, obſerved the motions of the Carthaginians. Eumachus falling into Numidia, firſt took the great city of Tocas, and conquered ſeveral of the Numidian cantons. Afterwards he beſieged and took Phellina; which was attended with the ſubmiſſion of the Aſphodelodians, a nation, according to Diodorus, as black as the Ethiopians. He then reduced ſeveral cities; and being at laſt elated with ſuch a run of good fortune, reſolved to penetrate into the more remote parts of Africa. Here he at firſt met with ſucceſs; but hearing that the barbarous nations were advancing in a formidable body to give him battle, he abandoned his conqueſts, and retreated with the utmoſt precipitation towards the ſea coaſts, after having loſt abundance of men.

48 He is reduced to the utmoſt diſtreſs.

This unfortunate expedition made a great alteration for the worſe in the affairs of Archagathus. The Carthaginians being informed of Eumachus's bad ſucceſs, reſolved to exert themſelves in an extraordinary manner to repair their former loſſes. They divided their forces into three bodies: one of theſe they ſent to the ſea coaſts, to keep the towns there in awe; another they deſpatched into the Mediterranean parts, to preſerve the allegiance of the inhabitants there; and the laſt body they ordered to the Upper Africa, to ſupport their confederates in that country. Archagathus being appriſed of the motions of the Carthaginians, divided his forces likewiſe into three bodies. One of theſe he ſent to obſerve the Carthaginian troops on the ſea coaſts, with orders to advance afterwards into the Upper Africa; another under the command of Æſchrion, one of his generals, he poſted at a proper diſtance in the heart of the country, to have an eye both on the enemy there and the barbarous nations; and with the laſt, which he led in perſon, he kept nearer Carthage, preſerving a communication with the other two, in order to ſend them ſuccours, or recal them, as the exigency of affairs ſhould require.—The Carthaginian troops ſent into the heart of the country, were commanded by Hanno, a general of great experience, who being informed of the approach of Æſchrion, laid an ambuſcade for him, into which he was drawn and cut off with 4000 foot and 200 horſe. Himilco, who commanded the Carthaginian forces in Upper Africa, having advice of Eumachus's march, immediately advanced againſt him. An engagement enſued, in which the Greeks were almoſt totally cut off, or periſhed with thirſt after the battle, out of 8000 foot only 30, and of 800 horſe only 40, having the good fortune to make their eſcape.

Archagathus receiving the melancholy news of theſe two defeats, immediately called in the detachments he had ſent out to haraſs the enemy, which would otherwiſe have been inſtantly cut off. He was, however, in a ſhort time hemmed in on all ſides, in ſuch a manner as to be reduced to the laſt extremity for want of proviſions, and ready every moment to be ſwallowed up by the numerous forces which ſurrounded him. In this deplorable ſituation Agathocles received an expreſs from Archagathus, acquainting him of the loſſes he had ſuſtained and the ſcarcity of proviſions he laboured under. Upon this the tyrant, leaving the care of the Sicilian war to one Leptines, by a ſtratagem got 18 Etruſcan ſhips that came to his aſſiſtance out of the harbour; and then engaging Carthage. the Carthaginian ſquadron which lay in its neighbourhood, took five of their ſhips, and made all their men priſoners. By this means he became maſter of the port, and ſecured a paſſage into it for the merchants of all nations, which ſoon reſtored plenty to that city, where the famine before had begun to make great havock. Supplying himſelf, therefore, with a ſufficient quantity of neceſſaries for the voyage he was going to undertake, he immediately ſet ſail for Africa.

49 Agathocles arrives in Africa.

Upon his arrival in this country, Agathocles reviewed his forces, and found them to conſiſt of 6000 Greeks, as many Samnites, Celtes, and Etruſcans; beſides 10,000 Africans, and 1500 horſe. As he found his troops almoſt in a ſtate of deſpair, he thought this a proper time for offering the enemy battle. The Carthaginians, however, did not think proper to accept the challenge; eſpecially as by keeping cloſe in their camp, where they had plenty of every thing, they could ſtarve the Greeks to a ſurrender without ſtriking a ſtroke. Upon this Agathocles attacked the Carthaginian camp with great bravery, made a conſiderable impreſſion upon it, and might perhaps have carried it, had not his mercenaries deſerted him almoſt at the firſt onſet. By this piece of cowardice he was forced to retire with precipitation to his camp, whither the Carthaginians purſued him very cloſely, doing great execution in the purſuit.

50 Attacks the camp of the enemy without ſucceſs.

51 Diſaſter in the Carthaginian camp.

The next night, the Carthaginians ſacrificed all the priſoners of diſtinction as a grateful acknowledgment to the gods for the victory they had gained. While they were employed in this inhuman work, the wind, ſuddenly riſing, carried the flames to the ſacred tabernacle near the altar, which was entirely conſumed, as well as the general's tent, and thoſe of the principal officers adjoining to it. A dreadful alarm took place through the whole camp, which was heightened by the great progreſs the fire made. For the ſoldiers tents conſiſting of very combuſtible materials, and the wind blowing in a moſt violent manner, the whole camp was almoſt entirely laid in aſhes; and many of the ſoldiers endeavouring to carry off their arms, and the rich baggage of their officers, periſhed in the flames. Some of thoſe who made their eſcape met with a fate equally unhappy: For, after Agathocles had received the laſt blow, the Africans deſerted him, and were in that inſtant coming over in a body to the Carthaginians. Theſe, the perſons who were flying from the flames took to be the whole Syracuſan army advancing in order of battle to attack their camp. Upon this a dreadful confuſion enſued. Some took to their heels; others fell down in heaps one upon another; and others engaged their comrades, miſtaking them for the enemy. Five thouſand men loſt their lives in this tumult, and the reſt thought proper to take refuge within the walls of Carthage; nor could the appearance of daylight, for ſome time, diſſipate their terrible apprehenſions. In the mean time the African deſerters, obſerving the great confuſion the Carthaginians were in, and not knowing the meaning of it, were ſo terrified, that they thought proper to return to the place from whence they came. The Syracuſans ſeeing a body of troops advancing towards them in good order, concluded that the enemy

52 Another in that of Agathocles.

were

Carthage. were marching to attack them, and therefore immediately cried out, "To arms." The flames aſcending out of the Carthaginian camp into the air, and the lamentable outcries proceeding from thence, confirmed them in this opinion, and greatly heightened their confuſion. The conſequence was much the ſame as in the Carthaginian camp; for coming to blows with one another inſtead of the enemy, they ſcarce recovered their ſenſes upon the return of light, and the inteſtine fray was ſo bloody that it coſt Agathocles 4000 men.

53 He eſcapes privately.

The laſt diſaſter ſo diſheartened the tyrant, that he immediately ſet about contriving means for making his eſcape privately; and this he at laſt, though with great difficulty, effected. After his departure, his two ſons were immediately put to death by the ſoldiers, who, chooſing a leader from among themſelves, made peace with the Carthaginians upon the following conditions: 1. That the Greeks ſhould deliver up all the places they held in Africa, receiving from them 300 talents; 2. That ſuch of them as were willing to ſerve in the Carthaginian army ſhould be kindly treated, and receive the uſual pay; and 3. That the reſt ſhould be tranſported to Sicily, and have the city of Selinus for their habitation.

54 Cauſes of the firſt Punic war.

From this time, to that of their firſt war with the Romans, we find nothing remarkable in the hiſtory of the Carthaginians. The firſt Punic war, as it is commonly called, happened about 256 years before Chriſt. At that time the Carthaginians were poſſeſſed of extenſive dominions in Africa; they had made conſiderable progreſs in Spain; were maſters of Sardinia, Corſica, and all the iſlands on the coaſt of Italy; and had extended their conqueſts to a great part of Sicily. The occaſion of the firſt rupture between the two republics was as follows: The Mamertines being vanquiſhed in battle, and reduced to great ſtraits by Hiero king of Syracuſe, had reſolved to deliver up Meſſina, the only city they now poſſeſſed, to that prince, with whoſe mild government and ſtrict probity they were well acquainted. Accordingly, Hiero was advancing at the head of his troops to take poſſeſſion of the city, when Hannibal, who at that time commanded the Carthaginian army in Sicily, prevented him by a ſtratagem. He came to meet Hiero, as it were to congratulate him on his victory; and amuſed him, while ſome of the Carthaginian troops filed off towards Meſſina. Hereupon the Mamertines, ſeeing their city ſupported by a new reinforcement, were divided into ſeveral opinions. Some were for accepting the protection of Carthage; others were for ſurrendering to the king of Syracuſe; but the greater part were for calling in the Romans to their aſſiſtance. Deputies were accordingly deſpatched to Rome, offering the poſſeſſion of the city to the Romans, and in the moſt moving terms imploring protection. This, after ſome debate, was agreed to; and the conſul Appius Claudius received orders to attempt a paſſage to Sicily, at the head of a powerful army. Being obliged to ſtay ſome time at Rome, however, one Caius Claudius, a perſon of great intrepidity and reſolution, was deſpatched with a few veſſels to Rhegium. On his arrival there, he obſerved the Carthaginian ſquadron to be ſo much ſuperior to his own, that he thought it would be little better than madneſs to attempt at that time to tranſport forces to Sicily. He croſſed the ſtraits, however, and had a conference with the Mamertines, in which he prevailed upon them all to accept of the protection of Rome; and on this he made the neceſſary preparations for tranſporting his forces. The Carthaginians being informed of the reſolutions of the Romans, ſent a ſtrong ſquadron of galleys under the command of Hanno, to intercept the Roman fleet; and accordingly the Carthaginian admiral, coming up with them near the coaſt of Sicily, attacked them with great fury. During the engagement, a violent ſtorm aroſe, which daſhed many of the Roman veſſels againſt the rocks, and did a vaſt deal of damage to their ſquadron; by which means Claudius was forced to retire to Rhegium, and this he accompliſhed with great difficulty. Hanno reſtored all the veſſels he had taken; but ordered the deputies ſent with them to expoſtulate with the Roman general upon the infraction of the treaties ſubſiſting between the two republics. This expoſtulation, however juſt, produced an open rupture; Claudius ſoon after poſſeſſing himſelf of Meſſina. Carthage.

55 Hanno intercepts the Roman fleet.

Such was the beginning of the firſt Punic war, which is ſaid to have laſted 24 years. The firſt year, the Carthaginians and Syracuſans laid ſiege to Meſſina; but not acting in concert as they ought to have done, were overthrown by the conſul Appius Claudius; and this defeat ſo much diſguſted Hiero with the Carthaginians, that he ſoon after concluded an alliance with the Romans. After this treaty, having no enemy to contend with but the Carthaginians, the Romans made themſelves maſters of all the cities on the weſtern coaſt of Sicily, and at the end of the campaign carried back moſt of their troops with them to take up their winter-quarters in Italy.

56 Carthaginians and Syracuſans defeated by the Romans.

The ſecond year, Hanno the Carthaginian general fixed his principal magazine at Agrigentum. This place was very ſtrong by nature, had been rendered almoſt impregnable by the new fortifications raiſed by the Carthaginians during the preceding winter, and was defended by a numerous garriſon commanded by one Hannibal, a general of great experience in war. For five months the Romans attempted to reduce the place by famine, and had actually brought the inhabitants to great diſtreſs, when a Carthaginian army of 50,000 foot, 6000 horſe, and 60 elephants, landed at Lilybæum, and from thence marched to Heraclea, within 20 miles of Agrigentum. There the general received a deputation from ſome of the inhabitants of Erbeſſa, where the Romans had their magazines, offering to put the town into his hands. It was accordingly delivered up; and by this means the Romans became ſo much diſtreſſed, that they had certainly been obliged to abandon their enterpriſe, had not Hiero ſupplied them with proviſions. But all the aſſiſtance he was able to give could not long have ſupported them, as their army was ſo much weakened by diſorders occaſioned by famine, that, out of 100,000 men of whom it originally conſiſted, ſcarce a fourth part remained fit for ſervice, and could no longer ſubſiſt on ſuch parſimonious ſupplies. But in the mean time Hannibal acquainted Hanno that the city was reduced to the utmoſt diſtreſs; upon which he reſolved to venture an engagement, which he had before declined. In this the Romans were victorious, and the city ſurrendered

57 Agrigentum taken by the Romans.

Carthage. rendered at diſcretion, though Hannibal with the greateſt part of the garriſon made their eſcape. This ended the campaign; and the Carthaginians being greatly chagrined at their bad ſucceſs, fined Hanno of an immenſe ſum of money, and deprived him of his command, appointing Hamilcar to ſucceed him in the command of the land army, and Hannibal in that of the fleet.

58 They build a fleet,

The third year, Hannibal received orders to ravage the coaſt of Italy; but the Romans had taken care to poſt detachments in ſuch places as were moſt proper to prevent his landing, ſo that the Carthaginian found it impoſſible to execute his orders. At the ſame time, the Romans, perceiving the advantages of being maſters of the ſea, ſet about building 120 galleys. While this was doing, they made themſelves maſters of moſt of the inland cities, but the Carthaginians reduced or kept ſteady in their intereſt moſt of the maritime ones; ſo that both parties were equally ſucceſsful during this campaign.

The fourth year, Hannibal by a ſtratagem made himſelf maſter of 17 Roman galleys; after which he committed great ravages on the coaſt of Italy, whither he had advanced to take a view of the Roman fleet.

59 and defeat the Carthaginians at ſea.

But he was afterwards attacked in his turn, loſt the greateſt part of his ſhips, and with great difficulty made his own eſcape. Soon after he was totally defeated by the conſul Duillius, with the loſs of 80 ſhips taken, 13 ſunk, 7000 men killed, and as many taken priſoners. After this victory Duillius landed in Sicily, put himſelf at the head of the land forces, relieved Segeſta, beſieged by Hamilcar, and made himſelf maſter of Macella, though defended by a numerous garriſon.

60 Sicilians defeated by the Carthaginians.

The fifth year a difference aroſe between the Romans and their Sicilian allies, which came to ſuch a height, that they encamped ſeparately. Of this Hamilcar availed himſelf, and attacking the Sicilians in their entrenchments, put 4000 of them to the ſword. He then drove the Romans from their poſts, took ſeveral cities from them, and overran the greateſt part of the country. In the mean time, Hannibal, after his defeat, ſailed with the ſhattered remains of his fleet to Carthage: but in order to ſecure himſelf from puniſhment, he ſent one of his friends with all ſpeed, before the event of the battle was known there, to acquaint the ſenate, that the Romans had put to ſea with a good number of heavy ill-built veſſels, each of them carrying ſome machine, the uſe of which the Carthaginians did not underſtand; and aſked whether it was the opinion of the ſenate that Hannibal ſhould attack them? Theſe machines were the *corvi*, which were then newly invented, and by means of which, chiefly, Duillius had gained the victory. The ſenate were unanimous in their opinion that the Romans ſhould be attacked; upon which the meſſenger acquainted them with the unfortunate event of the battle. As the ſenators had already declared themſelves for the engagement, they ſpared their general's life, and, according to Polybius, even continued him in the command of the fleet. In a ſhort time, being reinforced by a good number of galleys, and attended by ſome officers of great merit, he ſailed for the coaſt of Sardinia. He had not been long here, before he was ſurpriſed by the Romans, who carried off many of his ſhips, and took great numbers of his men priſoners. Carthage. This ſo incenſed the reſt, that they ſeized their unfortunate admiral, and crucified him; but who was his immediate ſucceſſor does not appear.

61 Corſica and Sardinia reduced by the Romans.

The ſixth year, the Romans made themſelves maſters of the iſlands of Corſica and Sardinia. Hanno, who commanded the Carthaginian forces in the latter, defended himſelf at a city called Olbia with incredible bravery; but being at laſt killed in one of the attacks, the place was ſurrendered, and the Romans ſoon became maſters of the whole iſland.

62 The Roman army in great danger.

The ſeventh year, the Romans took the town of Myteſtratum, in Sicily, from whence they marched towards Camarina, but in their way were ſurrounded in a deep valley, and in the moſt imminent danger of being cut off by the Carthaginian army.

63 Reſcued by the bravery of a legionary tribune.

In this extremity, a legionary tribune, by name *M. Calpurnius Flamma*, deſired the general to give him 300 choſen men; promiſing, with this ſmall company, to find the enemy ſuch employment as ſhould oblige them to leave a paſſage open for the Roman army. He performed his promiſe with a bravery truly heroic; for, having ſeized, in ſpite of all oppoſition, an eminence, and entrenched himſelf on it, the Carthaginians, jealous of his deſign, flocked from all quarters to drive him from his poſt. But the brave tribune kept their whole army in play, till the conſul taking advantage of the diverſion, drew his army out of the bad ſituation in which he had imprudently brought it. The legions were no ſooner out of danger, than they haſtened to the relief of their brave companions: but all they could do was to ſave their bodies from the inſults of their enemies; for they found them all dead on the ſpot, except Calpurnius, who lay under a heap of dead bodies all covered with wounds, but ſtill breathing. His wounds were immediately dreſſed, and it fortunately happened that none of them proved mortal; and for this glorious enterpriſe he received a crown of *gramen*. After this the Romans reduced ſeveral cities, and drove the enemy quite out of the territory of the Agrigentines; but were repulſed with great loſs before Lipara.

64 Carthaginians defeated at ſea by the Romans.

The eighth year, Regulus, who commanded the Roman fleet, obſerving that of the Carthaginians lying along the coaſt in diſorder, ſailed with a ſquadron of ten galleys, to obſerve their number and ſtrength, ordering the reſt of the fleet to follow him with all expedition. But as he drew too near the enemy, he was ſurrounded by a great number of Carthaginian galleys. The Romans fought with their uſual bravery; but being overpowered with numbers, were obliged to yield. The conſul, however, found means to make his eſcape, and joined the reſt of the fleet; and then had his full revenge of the enemy, 18 of their ſhips being taken, and eight ſunk.

65 Regulus invades Africa.

The ninth year, the Romans made preparations for invading Africa. Their fleet for this purpoſe conſiſted of 330 galleys, each of them having on board 120 ſoldiers and 300 rowers. The Carthaginian fleet conſiſted of 360 ſail, and was much better manned than that of the Romans. The two fleets met near Ecnomus, a promontory in Sicily; where, after a bloody engagement, which laſted the greater part of the day, the Carthaginians were entirely defeated, with the loſs of 30 galleys ſunk, and 63 taken with all their men.

Carthage. men. The Romans loſt only 24 galleys, which were all ſunk.—After this victory, the Romans having refitted their fleet, ſet ſail for the coaſt of Africa with all expedition. The firſt land they got ſight of was Cape Hermea, where the fleet lay at anchor for ſome time waiting till the galleys and tranſports came up. From thence they coaſted along till they arrived before Clupea, a city to the eaſt of Carthage, where they made their firſt deſcent.

66 Carthaginians in great conſternation.

No words can expreſs the conſternation of the Carthaginians on the arrival of the Romans in Africa. The inhabitants of Clupea were ſo terrified, that, according to Zonaras, they abandoned the place, which the Romans immediately took poſſeſſion of. Having left there a ſtrong garriſon to ſecure their ſhipping, and keep the adjacent territory in awe, they moved nearer Carthage, taking a great number of towns; they likewiſe plundered a prodigious number of villages, laid vaſt numbers of noblemen's ſeats in aſhes, and took above 20,000 priſoners. In ſhort, having plundered and ravaged the whole country, almoſt to the gates of Carthage, they returned to Clupea loaded with the immenſe booty they had acquired in the expedition.

67 Succeſs of Regulus.

The tenth year, Regulus puſhed on his conqueſts with great rapidity. To oppoſe his progreſs, Hamilcar was recalled from Sicily, and with him Boſtar and Aſdrubal were joined in command. Hamilcar commanded an army juſt equal to that of Regulus. The other two commanded ſeparate bodies, which were to join him or act apart as occaſion required. But, before they were in a condition to take the field, Regulus, purſuing his conqueſts, arrived on the banks of the *Bagrada*, a river which empties itſelf into the ſea at a ſmall diſtance from Carthage. Here he had a monſtrous ſerpent to contend with, which, according to the accounts of thoſe days, infected the waters of the river, poiſoned the air, and killed all other animals with its breath alone. When the Romans went to draw water, this huge dragon attacked them; and, twiſting itſelf round their bodies, either ſqueezed them to death, or ſwallowed them alive. As its hard and thick ſcales were proof againſt their darts and arrows, they were forced to have recourſe to the baliſtæ, which they made uſe of in ſieges to throw great ſtones, and to beat down the walls of beſieged cities. With theſe they diſcharged ſhowers of huge ſtones againſt this new enemy, and had the good luck with one of them, to break his back-bone; which diſabled him from twiſting and winding his immenſe body, and by that means gave the Romans an opportunity of approaching and diſpatching him with their darts. But his dead body corrupted the air and the water of the river; and ſpread ſo great an infection over the whole country, that the Romans were obliged to decamp. We are told that Regulus ſent to Rome the ſkin of this monſter, which was 120 feet long; and that it was hung up in a temple, where it was preſerved to the time of the Numantine war.

68 He kills a monſtrous ſerpent.

69 Defeats the Carthaginians;

Having paſſed this river, he beſieged *Adis*, or *Adda*, not far from Carthage, which the enemy attempted to relieve; but as they lay encamped among hills and rocks, where their elephants, in which the main ſtrength of their army conſiſted, could be of no uſe. Regulus attacked them in their camp, killed 17,000, of them and took 5000 priſoners, and 18 elephants. Upon the fame of this victory, deputations came from all quarters, inſomuch that the conqueror in a few days became maſter of 80 towns: among which were the city and port of Utica. This increaſed the alarm at Carthage; which was reduced to deſpair, when Regulus laid ſiege to Tunis, a great city about nine miles from the capital. The place was taken in ſight of the Carthaginians, who, from their walls, beheld all the operations of the ſiege, without making the leaſt attempt to relieve it. And to complete their misfortunes, the Numidians, their neighbours, and implacable enemies, entered their territories, committing everywhere the moſt dreadful devaſtations, which ſoon occaſioned a great ſcarcity of proviſions in the city. The public magazines were ſoon exhauſted: and, as the city was full of ſelfiſh merchants, who took advantage of the public diſtreſs, to ſell proviſions at an exorbitant price, a famine enſued, with all the evils which attend it.

Carthage.

70 and reduces them to the utmoſt deſpair.

71 His propoſals of peace rejected.

In this extremity Regulus advanced to the very gates of Carthage; and having encamped under the walls, ſent deputies to treat of a peace with the ſenate. The deputies were received with inexpreſſible joy; but the conditions they propoſed were ſuch that the ſenate could not hear them without the greateſt indignation. They were, 1. That the Carthaginians ſhould relinquiſh all claims to Sardinia, Corſica, and Sicily. 2. That they ſhould reſtore to the Romans all the priſoners they had taken from them ſince the beginning of the war. 3. That if they cared to redeem any of their own priſoners, they ſhould pay ſo much a-head for them as Rome ſhould judge reaſonable. 4. That they ſhould for ever pay the Romans an annual tribute. 5. That for the future they ſhould fit out but one man of war for their own uſe, and 50 triremes to ſerve in the Roman fleet, at the expence of Carthage, when required by any of the future conſuls. Theſe extravagant demands provoked the ſenators, who loudly and unanimouſly rejected them; the Roman deputies, however, told them that Regulus would not alter a ſingle letter of the propoſals, and that they muſt either conquer the Romans or obey them.

72 Xanthippus appointed to command the Carthaginian army.

In this extreme diſtreſs, ſome mercenaries arrived from Greece, among whom was a Lacedemonian, by name Xanthippus, a man of great valour and experience in war. This man, having informed himſelf of the circumſtances of the late battle, declared publicly, that their overthrow was more owing to their own miſconduct than to the ſuperiority of the enemy. This diſcourſe being ſpread abroad, came at laſt to the knowledge of the ſenate; and by them, and even by the deſire of the Carthaginian generals themſelves, Xanthippus was appointed commander in chief of their forces. His firſt care was to diſcipline his troops in a proper manner. He taught them how to march, encamp, widen and cloſe their ranks, and rally after the Lacedemonian manner under their proper colours. He then took the field with 12,000 foot, 4000 horſe, and 100 elephants. The Romans were ſurpriſed at the ſudden alteration they obſerved in the enemy's conduct: but Regulus, elated with his laſt ſucceſs, came and encamped at a ſmall diſtance from the Carthaginian army in a vaſt plain, where their elephants and

Carthage.

and horſe had room to act. The two armies were parted by a river, which Regulus boldly paſſed, by which means he left no room for a retreat in caſe of any misfortune. The engagement began with great fury; but ended in the total defeat of the Romans, who, except 2000 that eſcaped to Clupea, were all killed or taken priſoners, and among the latter was Regulus himſelf. The loſs of the Carthaginians ſcarce exceeded 800 men.

73 The Romans utterly defeated, and Regulus taken.

The Carthaginians remained on the field of battle till they had ſtripped the ſlain; and then entered their metropolis, which was almoſt the only place left them, in great triumph. They treated all their priſoners with great humanity, except Regulus; but as for him, he had ſo inſulted them in his proſperity, that they could not forbear ſhowing the higheſt marks of their reſentment. According to Zonaras and others, he was thrown into a dungeon, where he had only ſuſtenance allowed him barely ſufficient to keep him alive. Nay, his cruel maſters, to heighten his other torments, ordered a huge elephant (at the ſight of which animal, it ſeems, he was greatly terrified) to be conſtantly placed near him; which prevented him from enjoying any tranquillity or repoſe.

74 He is cruelly uſed.

75 Carthaginians defeated by ſea and land.

The eleventh year of this war, the Carthaginians, elated with their victory over Regulus, began to talk in a very high ſtrain, threatening Italy itſelf with an invaſion. To prevent this, the Romans took care to garriſon all their maritime towns, and fitted out a new fleet. In the mean time, the Carthaginians beſieged Clupea and Utica in vain, being obliged to abandon their enterpriſe, upon hearing that the Romans were equipping a fleet of 350 ſail. The Carthaginians having with incredible expedition refitted their old veſſels, and built a good number of new ones, met the Roman fleet off Cape Hermea. An engagement enſued, in which the Carthaginians were utterly defeated; 104 of their ſhips being ſunk, 30 taken, and 15,000 of their ſoldiers and rowers killed in the action. The Romans purſued their courſe to Clupea, where they were no ſooner landed, than they found themſelves attacked by the Carthaginian army, under the two Hannos, father and ſon. But, as the brave Xanthippus no longer commanded their army, notwithſtanding the Lacedemonian diſcipline he had introduced among them, they were routed at the very firſt onſet, with the loſs of 9000 men, and among them many of their chief lords.

76 Romans obliged to abandon Africa.

Notwithſtanding all their victories, however, the Romans found themſelves now obliged, for want of proviſions, to evacuate both Clupea and Utica, and abandon Africa altogether. Being deſirous of ſignalizing the end of their conſulate by ſome important conqueſt on Sicily, the conſuls ſteered for that iſland, contrary to the advice of their pilots, who repreſented their danger, on account of the ſeaſon being ſo far advanced. Their obſtinacy proved the deſtruction of the whole fleet; for a violent ſtorm ariſing, out of 370 veſſels only 80 eſcaped ſhipwreck, the reſt being ſwallowed up by the ſea, or daſhed againſt the rocks. This was by far the greateſt loſs that Rome had ever ſuſtained; for beſides the ſhips that were caſt away with their crews, a numerous army was deſtroyed, with all the riches of Africa, which had been by Regulus amaſſed and depoſited in Clupea, and were now from thence tranſporting to Rome. The whole coaſt from Pachinum to Camerina was covered with dead bodies and wrecks of ſhips; ſo that hiſtory can ſcarce afford an example of ſuch a dreadful diſaſter. Carthage.

77 Their fleet totally deſtroyed by a ſtorm.

The twelfth year, the Carthaginians hearing of this misfortune of the Romans, renewed the war in Sicily with freſh fury, hoping the whole iſland, which was now left defenceleſs, would fall into their hands. Carthalo, a Carthaginian commander, beſieged and took Agrigentum. The town he laid in aſhes, and demoliſhed the walls, obliging the inhabitants to fly to Olympium. Upon the news of this ſucceſs, Aſdrubal was ſent to Sicily with a large reinforcement of troops, and 150 elephants. They likewiſe fitted out a ſquadron, with which they retook the iſland of Corcyra, and marched a ſtrong body of forces into Mauritania and Numidia, to puniſh the people of thoſe countries for ſhowing a diſpoſition to join the Romans. In Sicily the Romans poſſeſſed themſelves of Cephalodium and Panormus, but were obliged by Carthalo to raiſe the ſiege of Drepanum with great loſs.

78 Agrigentum taken and deſtroyed by the Carthaginians.

The 13th year, the Romans ſent out a fleet of 260 galleys, which appeared off Lilybæum in Sicily; but finding this place too ſtrong, they ſteered from thence to the eaſtern coaſt of Africa, where they made ſeveral deſcents, ſurpriſed ſome cities, and plundered ſeveral towns and villages. They arrived ſafe at Panormus, and in a few days ſet ſail for Italy, having a fair wind till they came off Cape Palinurus, where ſo violent a ſtorm overtook them, that 160 of their galleys and a great number of their tranſports were loſt; upon which the Roman ſenate made a decree, that for the future no more than 50 veſſels ſhould be equipped; and that theſe ſhould be employed only in guarding the coaſt of Italy, and tranſporting the troops into Sicily.

79 The Romans fit out a new fleet.

80 Which is again deſtroyed.

The 14th year, the Romans made themſelves maſters of Himera and Lipara in Sicily; and the Carthaginians conceiving new hopes of conquering that iſland, began to make freſh levies in Gaul and Spain, and to equip a new fleet. But their treaſures being exhauſted, they applied to Ptolemy king of Egypt, intreating him to lend them 2000 talents: but he being reſolved to ſtand neuter, refuſed to comply with their requeſt; telling them that he could not, without breach of fidelity, aſſiſt one friend againſt another. However, the republic of Carthage making an effort, equipped a fleet of 200 ſail, and raiſed an army of 30,000 men, horſe and foot, and 140 elephants, appointing Aſdrubal commander in chief both of the fleet and army. The Romans then finding the great advantages of a fleet, reſolved to equip one, notwithſtanding all former diſaſters; and while the veſſels were building, two conſuls were choſen, men of valour and experience, to ſuperſede the acting ones in Sicily. Metellus, however, one of the former conſuls, being continued with the title of proconſul, found means to draw Aſdrubal into a battle on diſadvantageous terms near Panormus, and then ſallying out upon him, gave him a moſt terrible overthrow. Twenty thouſand of the enemy were killed, and many elephants. An hundred and four elephants were taken with their leaders, and ſent to Rome, where they were hunted and put to death in the circus.

81 They fit out another.

82 Carthaginians utterly defeated.

The 15th year the Romans beſieged Lilybæum; and

Carthage.

and the ſiege continued during the reſt of the firſt Punic war, and was the only thing remarkable that happened during that time *. The Carthaginians, on the firſt news of its being beſieged, ſent Regulus with ſome deputies to Rome to treat of a peace: but inſtead of forwarding the negotiation, he hindered it: and notwithſtanding he knew the torments prepared for him at Carthage, could not be prevailed upon to ſtay at Rome, but returning to his enemies country, was put to a moſt cruel death. During this ſiege, the Roman fleet under Claudius Pulcher was utterly defeated by Adherbal the Carthaginian admiral. Ninety of the Roman galleys were loſt in the action, 8000 of their men either killed or drowned, and 20,000 taken and ſent priſoners to Carthage; and the Carthaginians gained this ſignal victory without the loſs of a ſingle ſhip, or even a ſingle man. Another Roman fleet met with a ſtill ſeverer fate. It conſiſted of 120 galleys, 800 tranſports, and was laden with all ſort of military ſtores and proviſions. Every one of theſe veſſels was loſt by a ſtorm, with all they contained, not a ſingle plank being ſaved that could be uſed again; ſo that the Romans found themſelves once more deprived of their whole naval force.

83 Lilybæum beſieged by the Romans. * See *Lilybæum.*

84 They are defeated at ſea by the Carthaginians.

85 A Roman fleet utterly deſtroyed by a ſtorm.

86 Hamilcar Barcas ſent into Sicily.

In the mean time, the Carthaginian ſoldiery having ſhown a diſpoſition to mutiny, the ſenate ſent over Hamilcar Barcas, father of the famous Hannibal, to Sicily. He received a charte blanche from the ſenate to act as he thought proper; and by his excellent conduct and reſolution, ſhowed himſelf the greateſt general of his age. He defended Eryx, which he had taken by ſurpriſe, with ſuch vigour, that the Romans would never have been able to make themſelves maſters of it, had they not fitted out a new fleet at the expence of private citizens, which, having utterly defeated that of the Carthaginians, Hamilcar, notwithſtanding all his valour, was obliged to yield up the place which he had ſo long and ſo bravely defended. The following articles of a peace were immediately drawn up between the two commanders. 1. The Carthaginians ſhall evacuate all the places which they have in Sicily, and entirely quit that iſland. 2. They ſhall, in 20 years, pay the Romans, at equal payments every year, 2200 talents of ſilver, that is, 437,250l. Sterling. 3. They ſhall reſtore the Roman captives and deſerters without ranſom, and redeem their own priſoners with money. 4. They ſhall not make war upon Hiero king of Syracuſe, or his allies. Theſe articles being agreed to, Hamilcar ſurrendered Eryx upon condition that all his ſoldiers ſhould march out with him, upon his paying for each of them 18 *Roman denarii.* Hoſtages were given on both ſides, and deputies were ſent to Rome to procure a ratification of the treaty by the ſenate. After the ſenators had thoroughly informed themſelves of the ſtate of affairs, two more articles were added, viz. 1. That 1000 talents ſhould be paid immediately, and the 2200 in the ſpace of 10 years at equal payments. 2. That the Carthaginians ſhould quit all the little iſlands about Italy and Sicily, and never more come near them with ſhips of war, or raiſe mercenaries in thoſe places. Neceſſity obliged Hamilcar to conſent to theſe terms; but he returned to Carthage with a hatred to the Romans, which he did not even ſuffer to die with him, but tranſmitted to his ſon the great Hannibal.

87 Peace with the Romans.

Carthage.

The Carthaginians were no ſoon got out of this bloody and expenſive war, than they found themſelves engaged in another, which was like to have proved fatal to them. It is called by ancient hiſtorians the *Libyan war*, or the *war with the mercenaries*. The principal occaſion of it was, that when Hamilcar returned to Carthage, he found the republic ſo much impoveriſhed, that, far from being able to give theſe troops the largeſſes and rewards promiſed them, it could not pay them their arrears. He had committed the care of tranſporting them to one *Giſco*, who, being an officer of great penetration, as though he had foreſeen what would happen, did not ſhip them off all at once, but in ſmall and ſeparate parties, that thoſe who came firſt might be paid off and ſent home before the arrival of the reſt. The Carthaginians at home, however, did not act with the ſame prudence. As the ſtate was almoſt entirely exhauſted by the late war, and the immenſe ſum of money, in conſequence of the peace, paid to the Romans, they judged it would be a laudable action to ſave ſomething to the public. They did not therefore pay off the mercenaries in proportion as they arrived, thinking it more proper to wait till they all came together, with a view of obtaining ſome remiſſion of their arrears. But being ſoon made ſenſible of their wrong conduct on this occaſion, by the frequent diſorders theſe barbarians committed in the city, they with ſome difficulty prevailed upon the officers to take up their quarters at Sicca, and canton their troops in that neighbourhood. To induce them to this, however, they gave them a ſum of money for their preſent ſubſiſtence, and promiſed to comply with their pretenſions when the remainder of their troops arrived from Sicily. Here, being wholly immerſed in idleneſs, to which they had long been ſtrangers, a neglect of diſcipline enſued, and of courſe a petulant and licentious ſpirit immediately took place. They were now determined not to acquieſce in receiving their bare pay, but to inſiſt upon the rewards Hamilcar had promiſed them, and even to compel the ſtate of Carthage to comply with their demands by force of arms. The ſenate being informed of the mutinous diſpoſition of the ſoldiery, diſpatched Hanno, one of the ſuffetes, to pacify them. Upon his arrival at Sicca, he expatiated largely upon the poverty of the ſtate, and the heavy taxes with which the citizens of Carthage were loaded; and therefore, inſtead of anſwering their high expectations, he deſired them to be ſatisfied with receiving part of their pay, and remit the remainder to ſerve the preſſing exigencies of the republic. The mercenaries being highly provoked, that neither Hamilcar, nor any other of the principal officers who commanded them in Sicily, and were the beſt judges of their merit, made their appearance on this occaſion, but only Hanno, a perſon utterly unknown, and above all others utterly diſagreeable to them, immediately had recourſe to arms. Aſſembling therefore in a body, to the number of 20,000, they advanced to Tunis, and immediately encamped before that city.

88 Cauſes of the war with the mercenaries.

89 Imprudent conduct of Hanno.

The Carthaginians being greatly alarmed at the approach of ſo formidable a body to Tunis, made large conceſſions to the mercenaries, in order to bring them back to their duty: but, far from being ſoftened, they grew more inſolent upon theſe conceſſions, taking

Carthage. taking them for the effects of fear: and therefore were altogether averſe to thoughts of accommodation. The Carthaginians, making a virtue of neceſſity, ſhowed a diſpoſition to ſatisfy them in all points, and agreed to refer themſelves to the opinion of ſome general in Sicily, which they had all along deſired; leaving the choice of ſuch commander entirely to them. Giſco was accordingly pitched upon to mediate this affair, the mercenaries believing Hamilcar to have been a principal cauſe of the ill treatment they met with, ſince he never appeared among them, and, according to the general opinion, had voluntarily reſigned his commiſſion. Giſco ſoon arrived at Tunis with money to pay the troops; and after conferring with the officers of the ſeveral nations apart, he harangued them in ſuch a manner, that a treaty was upon the point of being concluded, when Spendius and Mathos, two of the principal mutineers, occaſioned a tumult in every part of the camp. Spendius was by nation a Campanian, who had been a ſlave at Rome, and had fled to the Carthaginians. The apprehenſions he was under of being delivered to his old maſter, by whom he was ſure to be hanged or crucified, prompted him to break off the accommodation. Mathos was an African, and free born; but as he had been active in raiſing the rebellion, and was well acquainted with the implacable diſpoſition of the Carthaginians, he knew that a peace muſt infallibly prove his ruin. He therefore joined with Spendius, and inſinuated to the Africans the danger of concluding a treaty at that juncture, which could not but leave them ſingly expoſed to the rage of the Carthaginians. This ſo incenſed the Africans, who were much more numerous than the troops of any other nation, that they immediately aſſembled in a tumultuous manner. The foreigners ſoon joined them, being inſpired by Spendius with an equal degree of fury. Nothing was now to be heard but the moſt horrid oaths and imprecations againſt Giſco and the Carthaginians. Whoever offered to make any remonſtrance, or lend an ear to temperate counſels, was ſtoned to death by the enraged multitude. Nay, many perſons loſt their lives barely for attempting to ſpeak, before it could be known whether they were in the intereſt of Spendius or the Carthaginians.

In the midſt of theſe commotions, Giſco behaved with great firmneſs and intrepidity. He left no methods untried to ſoften the officers and calm the minds of the ſoldiery; but the torrent of ſedition was now ſo ſtrong, that there was no poſſibility of keeping it within bounds. They therefore ſeized upon the military cheſt, dividing the money among themſelves in part of their arrears, put the perſon of Giſco under an arreſt, and treated him as well as his attendants with the utmoſt indignity. Mathos and Spendius, to deſtroy the remoteſt hopes of an accommodation with Carthage, applauded the courage and reſolution of their men, loaded the unhappy Giſco and his followers with irons, and formally declared war againſt the Carthaginians. All the cities of Africa, to whom they had ſent deputies to exhort them to recover their liberty, ſoon came over to them, except Utica and Hippo Diarrhytus. By this means their army being greatly increaſed, they divided it into two parts, with one of which they moved towards Utica, whilſt the other marched to Hippo, in order to beſiege both places. The Carthaginians, in the mean time, found themſelves ready to ſink under the preſſure of their misfortunes. After they had been haraſſed 24 years by a moſt cruel and deſtructive foreign war, they entertained ſome hopes of enjoying repoſe. The citizens of Carthage drew their particular ſubſiſtence from the rents or revenues of their lands, and the public expences from the tribute paid from Africa; all which they were not only deprived of at once, but, what was worſe, had it directly turned againſt them. They were deſtitute of arms and forces either by ſea or land; had made no preparations for the ſuſtaining of a ſiege, or the equipping of a fleet. They ſuffered all the calamities incident to the moſt ruinous civil war; and, to complete their miſery, had not the leaſt proſpect of receiving aſſiſtance from any foreign friend or ally. Notwithſtanding their deplorable ſituation, however, they did not deſpond, but purſued all the meaſures neceſſary to put themſelves into a poſture of defence. Hanno was appointed commander in chief of all their forces; and the moſt ſtrenuous efforts were made, not only to repel all the attempts of the mutineers, but even to reduce them by force of arms.

90 The mercenaries declare war.

Carthage.

In the mean time Mathos and Spendius laid ſiege to Utica and Hippacra at once; but as they were carried on by detachments drawn from the army for that purpoſe, they remained with the main body of their forces at Tunis, and thereby cut off all communication betwixt Carthage and the continent of Africa. By this means the capital was kept in a kind of blockade. The Africans likewiſe haraſſed them by perpetual alarms, advancing to the very walls of Carthage by day as well as by night, and treating with the utmoſt cruelty every Carthaginian that fell into their hands.

91 They are defeated by Hanno.

Hanno was deſpatched to the relief of Utica with a good body of forces, 100 elephants, and a large train of battering engines. Having taken a view of the enemy, he immediately attacked their intrenchments, and after an obſtinate diſpute forced them. The mercenaries loſt a vaſt number of men; and conſequently the advantages gained by Hanno were ſo great, that they might have proved deciſive, had he made a proper uſe of them: But becoming ſecure after his victory, and his troops being everywhere off their duty, the mercenaries, having rallied their forces, fell upon him, cut off many of his men, forced the reſt to fly into the town, retook and plundered the camp, and ſeized all the proviſions, military ſtores, &c. brought to the relief of the beſieged. Nor was this the only inſtance of Hanno's military incapacity. Notwithſtanding he lay encamped in the moſt advantageous manner near a town called *Gorza*, at which place he twice overthrew the enemy, and had it in his power to have totally ruined them, he yet neglected to improve thoſe advantages, and even ſuffered the mercenaries to poſſeſs themſelves of the iſthmus, which joined the peninſula on which Carthage ſtood, to the continent of Africa.

92 He is in his turn defeated.

93 Hamilcar Barcas appointed to command againſt them.

Theſe repeated miſtakes induced the Carthaginians once more to place Hamilcar Barcas at the head of their forces. He marched againſt the enemy with 10,000 men, horſe, and foot, being all the troops the

Carthage. Carthaginians could then aſſemble for their defence; a full proof of the low ſtate to which they were at that time reduced. As Mathos, after he had poſſeſſed himſelf of the iſthmus, had poſted proper detachments in two paſſes on two hills facing the continent, and guarded the bridge over the Bagrada, which through Hanno's neglect he had taken, Hamilcar ſaw little probability of engaging him upon equal terms, or indeed of coming at him. Obſerving, however, that on the blowing of certain winds, the mouth of the river was choked up with ſand, ſo as to become paſſable, though with no ſmall difficulty, as long as theſe winds continued; he halted for ſome time at the river's mouth, without communicating his deſign to any perſon. As ſoon as the wind favoured his intended project, he paſſed the river privately by night, and immediately after his paſſage, he drew up the troops in order of battle; and advancing into the plain where his elephants were capable of acting, moved towards Mathos who was poſted at the village near the bridge. This daring action greatly ſurpriſed and intimidated the Africans. However, Spendius receiving intelligence of the enemy's motions, drew a body of 10,000 men out of Mathos's camp, with which he attended Hamilcar on one ſide, and ordered 15,000 from Utica to obſerve him on the other, thinking by this means to ſurround the Carthaginians, and cut them all off at one ſtroke.

94 He defeats them. By feigning a retreat, Hamilcar found means to engage them at a diſadvantage, and gave them a total overthrow, with the loſs of 6000 killed and 2000 taken priſoners. The reſt fled, ſome to the town at the bridge, and others to the camp at Utica. He did not give them time to recover from their defeat, but purſued them to the town near the bridge before mentioned; which he entered without oppoſition, the mercenaries flying in great confuſion to Tunis; and upon this many towns ſubmitted of their own accord to the Carthaginians, whilſt others were reduced by force.

Notwithſtanding theſe diſaſters, Mathos puſhed on the ſiege of Hippo with great vigour, and appointed Spendius and Autaritus, commanders of the Gauls, with a ſtrong body, to obſerve the motions of Hamilcar. Theſe two commanders, therefore, at the head of a choice detachment of 6000 men drawn out of the camp at Tunis, and 2000 Gallic horſe, attended the Carthaginian general, approaching him as near as they could with ſafety, and keeping cloſe to the ſkirts of the mountains. At laſt Spendius, having received a ſtrong reinforcement of Africans and Numidians, and poſſeſſing himſelf of all the heights ſurrounding the plain in which Hamilcar lay encamped, reſolved not to let ſlip ſo favourable an opportunity of attacking him. Had a battle now enſued, Hamilcar and his army muſt in all probability have been cut off; but by the deſertion of one Naravaſus a young Numidian nobleman, with 2000 men, he found himſelf enabled to offer his enemies battle. The fight was

95 Mercenaries again defeated. obſtinate and bloody; but at laſt the mercenaries were entirely overthrown, with the loſs of 10,000 men killed and 4000 taken priſoners. All the priſoners that were willing to enliſt in the Carthaginian ſervice Hamilcar received among his troops, ſupplying them with the arms of the ſoldiers who had fallen in the engagement. To the reſt he gave full liberty to go where they pleaſed, upon condition that they ſhould never Carthage. for the future bear arms againſt the Carthaginians; informing them at the ſame time, however, that as many violators of this agreement as fell into his hands muſt expect to find no mercy.

96 They put to death all the Carthaginian priſoners. Mathos and his aſſociates, fearing that this affected lenity of Hamilcar might occaſion a defection among the troops, thought that the beſt expedient would be to put them upon ſome action, ſo execrable in its nature that no hopes of reconciliation might remain. By their advice, therefore, Giſco, and all the Carthaginian priſoners were put to death; and when Hamilcar ſent to demand the remains of his countrymen, he received for anſwer, that whoever preſumed hereafter to come upon that errand, ſhould meet with Giſco's fate: after which they came to a reſolution to treat with the ſame barbarity all ſuch Carthaginians as ſhould fall into their hands. In return for this enormity, Hamilcar threw all the priſoners that fell into his hands to be devoured by wild beaſts; being convinced that compaſſion ſerved only to make his enemies more fierce and untractable.

The war was now carried on generally to the advantage of the Carthaginians; nevertheleſs, the malecontents ſtill found themſelves in a capacity to take the field with an army of 50,000 men. They watched Hamilcar's motions, but kept on the hills, carefully avoiding to come down into the plains, on account of the Numidian horſe and Carthaginian elephants. Hamilcar, being much ſuperior in ſkill to any of their generals, at laſt ſhut them up in a poſt, ſo ſituated, that it was impoſſible to get out of it. Here he kept them ſtrictly beſieged: and the mercenaries, not daring to venture a battle, began to fortify their

97 They are beſieged by Hamilcar. camp, and ſurround it with ditches and intrenchments. They were ſoon preſſed by famine ſo ſorely, that they were obliged to eat one another: but they were driven deſperate by the conſciouſneſs of their guilt, and therefore did not deſire any terms of accommodation. At laſt being reduced to the utmoſt extremity of miſery, they inſiſted that Spendius, Autaritus, and Zarxas, their leaders, ſhould in perſon have a conference with Hamilcar, and make propoſals to him. Peace was accordingly concluded upon the following terms, viz. That ten of the ringleaders of the malecontents ſhould be left entirely to the mercy of the Carthaginians, and that the troops ſhould all be diſarmed, every man retiring only in a ſingle coat. The treaty was no ſooner concluded, than Hamilcar, by virtue of the firſt article, ſeized upon the negotiators themſelves; and the army being informed that their chiefs were under arreſt, had

98 40,000 of them deſtroyed. immediately recourſe to arms, as ſuſpecting they were betrayed; but Hamilcar, drawing out his army in order of battle, ſurrounded them, and either cut them to pieces, or trod them to death with his elephants. The number of wretches who periſhed on this occaſion amounted to above 40,000.

After the deſtruction of the army, Hamilcar inveſted Tunis, whither Mathos had retired with all his remaining forces. Hamilcar had another general, named *Hannibal*, joined in the command with him. Hannibal's quarter was on the road leading to Carthage, and Hamilcar's on the oppoſite ſide. The army was no ſooner encamped, than Hamilcar cauſed Spendius, and the reſt of the priſoners, to be led out

in

Carthage. in the view of the beſieged, and crucified near the walls. Mathos, however, obſerving that Hannibal did not keep ſo good a guard as he ought to have done, made a ſally, attacked his quarters, killed many of his men, took ſeveral priſoners, among whom was Hannibal himſelf, and plundered his camp. Taking the body of Spendius from the croſs, Mathos immediately ſubſtituted Hannibal in its room; and 30 Carthaginian priſoners of diſtinction were crucified around him. Upon this diſaſter, Hamilcar immediately decamped, and poſted himſelf along the ſea coaſt, near the mouth of the river Bagrada.

99 Hannibal taken and crucified by Mathos.

The ſenate, though greatly terrified by this unexpected blow, omitted no means neceſſary for their preſervation. They ſent 30 ſenators, with Hanno at their head, to conſult with Hamilcar about the proper meaſures for putting an end to this unnatural war, conjuring, in the moſt preſſing manner, Hanno to be reconciled to Hamilcar, and to ſacrifice his private reſentment to the public benefit. This, with ſome difficulty, was effected; and the two generals came to a full reſolution to act in concert for the good of the public. The ſenate at the ſame time, ordered all the youth capable of bearing arms to be preſſed into the ſervice: by which means a ſtrong reinforcement being ſent to Hamilcar, he ſoon found himſelf in a condition to act offenſively. He now defeated the enemy in all rencounters, drew Mathos into frequent ambuſcades, and gave him one notable overthrow near Leptis. This reduced the rebels to the neceſſity of hazarding a deciſive battle, which proved fatal to them. The mercenaries fled almoſt at the firſt onſet; moſt of their army fell in the field of battle, and in the purſuit. Mathos, with a few, eſcaped to a neighbouring town, where he was taken alive, carried to Carthage, and executed; and then by the reduction of the revolted cities an end was put to this war, which, from the exceſſes of cruelty committed in it, according to Polybius, went among the Greeks by the name of the *inexpiable war*.

100 Mathos entirely defeated and taken priſoner.

During the Libyan war, the Romans, upon ſome abſurd pretences, wreſted the iſland of Sardinia from the Carthaginians; which the latter not being able to reſiſt, were obliged to ſubmit to. Hamilcar finding his country not in a condition to enter into an immediate war with Rome, formed a ſcheme to put it on a level with that haughty republic. This was by making an entire conqueſt of Spain, by which means the Carthaginians might have troops capable of coping with the Romans. In order to facilitate the execution of this ſcheme, he inſpired both his ſon-in-law Aſdrubal, and his ſon Hannibal, with an implacable averſion to the Romans, as the great oppoſers of his country's grandeur. Having completed all the neceſſary preparations, Hamilcar, after having greatly enlarged the Carthaginian dominions in Africa, entered Spain, where he commanded nine years, during which time he ſubdued many warlike nations, and amaſſed an immenſe quantity of treaſure, which he diſtributed partly amongſt his troops, atd partly amongſt the great men at Carthage; by which means he ſupported his intereſts with theſe two powerful bodies. At laſt, he was killed in a battle, and was ſucceeded by his ſon-in-law Aſdrubal. This general fully anſwered the expectations of his countrymen; greatly enlarged their dominions in Spain; and built the city of New Carthage, now Carthagena. He made ſuch progreſs in his conqueſts, that the Romans began to grow jealous. They did not, however, chooſe at preſent to come to an open rupture, on account of the apprehenſions they were under of an invaſion from the Gauls. They judged it moſt proper, therefore, to have recourſe to milder methods; and prevailed upon Aſdrubal to conclude a new treaty with them. The articles of it were, 1. That the Carthaginians ſhould not paſs the Iberus. 2. That the Saguntines, a colony of Zacynthians, and a city ſituated between the Iberus and that part of Spain ſubject to the Carthaginians, as well as the other Greek colonies there, ſhould enjoy their ancient rights and privileges.

101 Hamilcar's ſcheme to equal Carthage with Rome.

102 His death.

Carthage.

103 Aſdrubal's treaty with the Romans.

Aſdrubal, after having governed the Carthaginian dominions in Spain for eight years, was treacherouſly murdered by a Gaul, whoſe maſter he had put to death. Three years before this happened, he had written to Carthage, to deſire that young Hannibal, then twenty-two years of age, might be ſent to him. This requeſt was complied with, notwithſtanding the oppoſition of Hanno: and from the firſt arrival of the young man in the camp, he became the darling of the whole army. The great reſemblance he bore to Hamilcar rendered him extremely agreeable to the troops. Every talent and qualification he ſeemed to poſſeſs, that contribute towards forming a great man. After the death of Aſdrubal, he was ſaluted general by the army with the higheſt demonſtrations of joy. He immediately put himſelf in motion: and in the firſt campaign conquered the Olcades, a nation ſeated near the Iberus. The next year he ſubdued the Vaccæi, another nation in that neighbourhood. Soon after, the Carpætani, one of the moſt powerful nations in Spain, declared againſt the Carthaginians. Their army conſiſted of 100,000 men, with which they propoſed to attack Hannibal on his return from the Vaccæi; but by a ſtratagem they were utterly defeated, and the whole nation obliged to ſubmit.

104 He is murdered.

105 Succeeded by Hannibal, who makes vaſt conqueſts in Spain.

Nothing now remained to oppoſe the progreſs of the Carthaginian arms but the city of Saguntum. Hannibal, however, for ſome time, did not think proper to come to a rupture with the Romans by attacking that place. At laſt he found means to embroil ſome of the neighbouring cantons, eſpecially the Turdetani, or, as Appian calls them, the *Torboletæ*, with the Saguntines, and thus furniſhed himſelf with a pretence to attack their city. Upon the commencement of the ſiege, the Roman ſenate deſpatched two ambaſſadors to Hannibal, with orders to proceed to Carthage in caſe the general refuſed to give them ſatisfaction. They were ſcarce landed, when Hannibal, who was carrying on the ſiege of Saguntum with great vigour, ſent them word that he had ſomething elſe to do than to give audience to ambaſſadors. At laſt, however, he admitted them; and, in anſwer to their remonſtrances, told them, that the Saguntines had drawn their misfortunes upon themſelves, by committing hoſtilities againſt the allies of Carthage; and at the ſame time deſired the deputies, if they had any complaints to make of them, to carry them to the ſenate of Carthage. On their arrival in that capital, they demanded that Hannibal might be delivered up to the Romans to be puniſhed according to his deſerts; and

106 He attacks Saguntum.

Carthage. and this not being complied with, war was immediately declared between the two nations.

107 and takes it. The Saguntines are ſaid to have defended themſelves for eight months with incredible bravery. At laſt, however, the city was taken, and the inhabitants were treated with the utmoſt cruelty. After this conqueſt, Hannibal, put his African troops into winter quarters at New Carthage; but in order to gain their affection, he permitted the Spaniards to retire to their reſpective homes.

108 He ſets out for Italy. The next campaign, having taken the neceſſary meaſures for ſecuring Africa and Spain, he paſſed the Iberus, ſubdued all the nations betwixt that river and the Pyrenees, appointed Hanno commander of all the new conquered diſtrict, and immediately began his march for Italy. Upon muſtering his forces, after they had been weakened by ſieges, deſertion, mortality, and a detachment of 10,000 foot and 1000 horſe, left with Hanno to ſupport him in his new poſt, he found them to amount to 50,000 foot and 9000 horſe, all veteran troops, and the beſt in the world. As they had left their heavy baggage with Hanno, and were all light-armed, Hannibal eaſily croſſed the Pyrenees; paſſed by Ruſcino, a frontier town of the Gauls, and arrived on the banks of the Rhone without oppoſition. This river he paſſed, notwithſtanding of ſome oppoſition from the Gauls; and was for ſome time in doubt whether he ſhould advance to engage the Romans, who, under Scipio, were bending their march that way, or continue his march for Italy. But to the latter he was ſoon determined by the arrival of Magilus, prince of the Boii, who brought rich preſents with him, and offered to conduct the Carthaginian army over the Alps. Nothing could have happened more favourable to Hannibal's affairs than the arrival of this prince, ſince there was no room to doubt the ſincerity of his intentions. For the Boii bore an implacable enmity to the Romans, and had even come to an open rupture with them, upon the firſt news that Italy was threatened with an invaſion from the Carthaginians.

109 He croſſes the Alps. It is not known with certainty where Hannibal began to aſcend the Alps. As ſoon as he began his march, the petty kings of the country aſſembled their forces in great numbers; and taking poſſeſſion of the eminences over which the Carthaginians muſt neceſſarily paſs, they continued haraſſing them, and were no ſooner driven from one eminence than they ſeized on another, diſputing every foot of land with the enemy, and deſtroying great numbers of them by the advantage they had of the ground. Hannibal, however, having found means to poſſeſs himſelf of an advantageous poſt, defeated and diſperſed the enemy; and ſoon after took their capital city, where he found the priſoners, horſes, &c. that had before fallen into the hands of the enemy, and likewiſe corn ſufficient to ſerve the army for three days. At laſt, after a moſt fatiguing march of nine days, he arrived at the top of the mountains. Here he encamped, and halted two days, to give his wearied troops ſome repoſe, and to wait for the ſtragglers. As the ſnow had lately fallen in great plenty, and covered the ground, this ſight terrified the Africans and Spaniards, who were much affected with the cold. In order, therefore, to encourage them, the Carthaginian general led them to the top of the higheſt rock on the ſide of Italy, and thence gave Carthage. them a view of the large and fruitful plains of Inſubria, acquainting them that the Gauls, whoſe country they ſaw, were ready to join them. He alſo pointed out to them the place whereabout Rome ſtood, telling them, that by climbing the Alps they had ſcaled the walls of that rich metropolis; and having thus animated his troops, he decamped, and began to deſcend the mountains. The difficulties they met with in their deſcent were much greater than thoſe that had occurred while they aſcended. They had indeed no enemy to contend with, except ſome ſcattered parties that came to ſteal rather than to fight; but the deep ſnows, the mountains of ice, craggy rocks, and frightful precipices, proved more terrible than any enemy. After they had for ſome days marched through narrow, ſteep, and ſlippery ways, they came at laſt to a place which neither elephants, horſes, nor men, could paſs. The way which lay between two precipices was exceeding narrow; and the declivity, which was very ſteep, had become more dangerous by the falling away of the earth. Here the guides ſtopped; and the whole army being terrified, Hannibal propoſed at firſt to march round about, and attempt ſome other way: but all places round him being covered with ſnow, he found himſelf reduced to the neceſſity of cutting a way into the rock itſelf, through which his men, horſes, and elephants, might deſcend. This work was accompliſhed with incredible labour; and then Hannibal, having ſpent nine days in aſcending, and ſix in deſcending, the Alps, gained at length Inſubria; and, notwithſtanding all the diſaſters he had met with by the way, entered the country with all the boldneſs of a conqueror.

Hannibal, on his entry into Inſubria, reviewed his army; when he found that of the 50,000 foot, with whom he ſet out from New Carthage five months and 15 days before, he had now but 20,000, and that his 9000 horſe were reduced to 6000. His firſt care, after he entered Italy, was to refreſh his troops; who after ſo long a march, and ſuch inexpreſſible hardſhips, looked like as many ſkeletons raiſed from the dead, or ſavages born in a deſert. He did not, however, ſuffer them to languiſh long in idleneſs; but, joining the Inſubrians, who were at war with the Taurinians, laid ſiege to Taurinum, the only city in the country, and in three days time became maſter of it, putting all who reſiſted to the ſword. This ſtruck the neighbouring barbarians with ſuch terror, that of their own accord they ſubmitted to the conqueror, and ſupplied his army with all ſorts of proviſions.

110 Taurinum taken.

Scipio, the Roman general, in the mean time, who had gone in queſt of Hannibal on the banks of the Rhone, was ſurpriſed to find his antagoniſt had croſſed the Alps and entered Italy. He therefore returned with the utmoſt expedition. An engagement enſued near the river Ticinus, in which the Romans were defeated. The immediate conſequence was, that Scipio repaſſed that river, and Hannibal continued his march to the banks of the Po. Here he ſtaid two days, before he could croſs that river over a bridge of boats. He then ſent Mago in purſuit of the enemy, who having rallied their ſcattered forces, and repaſſed the Po, were encamped at Placentia. Afterwards having concluded a treaty with ſeveral of the Gallic cantons,

111 The Roman defeated near the Ticinus.

Carthage. cantons, he joined his brother with the reſt of the army, and again offered battle to the Romans: but this they thought proper to decline; and at laſt the conſul, being intimidated by the deſertion of a body of Gauls, abandoned his camp, paſſed the Trebia, and poſted himſelf on an eminence near that river. Here he drew lines round his camp, and waited the arrival of his colleague with the forces from Sicily.

Hannibal being appriſed of the conſul's departure, ſent out the Numidian horſe to haraſs him on his march; himſelf moving with the main body to ſupport them in caſe of need. The Numidians arriving before the rear of the Roman army had quite paſſed the Trebia, put to the ſword or made priſoners all the ſtragglers they found there. Soon after, Hannibal coming up, encamped in ſight of the Roman army on the oppoſite bank. Here having learned the character of the conſul Sempronius lately arrived, he ſoon brought him to an engagement, and entirely defeated him. Ten thouſand of the enemy retired to Placentia; but the reſt were either killed or taken priſoners. The Carthaginians purſued the flying Romans as far as the Trebia, but did not think proper to repaſs that river on account of the exceſſive cold.

112 They are again defeated.

Hannibal, after this action upon the Trebia, ordered the Numidians, Celtiberians, and Luſitanians, to make incurſions into the Roman territories, where they committed great devaſtations. During his ſtate of inaction, he endeavoured to win the affections of the Gauls, and likewiſe of the allies of the Romans; declaring to the Gallic and Italian priſoners, that he had no intention of making war upon them, being determined to reſtore them to their liberty, and protect them againſt the Romans: and to confirm them in their good opinion of him, he diſmiſſed them all without ranſom.

113 They are utterly defeated near the lake Thraſymenus.

Next year having croſſed the Apennines, and penetrated into Etruria, Hannibal received intelligence that the new conſul Flaminius lay encamped with the Roman army under the walls of Aretium. Having learned the true character of this general, that he was of a haughty, fierce, and raſh diſpoſition, he doubted not of being ſoon able to bring him to a battle. To inflame the impetuous ſpirit of Flaminius, the Carthaginian general took the road to Rome, and, leaving the Roman army behind him, deſtroyed all the country through which he paſſed with fire and ſword; and as that part of Italy abounded with all the elegancies as well as neceſſaries of life, the Romans and their allies ſuffered an incredible loſs on this occaſion. The raſh conſul was inflamed with the utmoſt rage, on ſeeing the ravages committed by the Carthaginians; and therefore immediately approached them with great temerity, as if certain of victory. Hannibal in the mean time kept on, ſtill advancing towards Rome, having Crotona on the left hand, and the lake Thraſymenus on the right; and at laſt, having drawn Flaminius into an ambuſcade, entirely defeated him. The general himſelf, with 15,000 of his men, fell on the field of battle. A great number were likewiſe taken priſoners; and a body of 6000 men, who had fled to a town in Etruria, ſurrendered to Maherbal the next day. Hannibal loſt only 1500 men on this occaſion, moſt of whom were Gauls; though great numbers, both of his ſoldiers and of the Romans, died of their wounds. Being ſoon after informed that the conſul Servilius had detached a body of 4000, or, according to Apian, 8000 horſe from Ariminum, to reinforce his colleague in Etruria, Hannibal ſent out Maherbal, with all the cavalry, and ſome of the infantry, to attack him.—The Roman detachment conſiſted of choſen men, and was commanded by Centenius a patrician. Maherbal had the good fortune to meet with him, and after a ſhort diſpute entirely defeated him. Two thouſand of the Romans were laid dead on the ſpot; the reſt, retiring to a neighbouring eminence, were ſurrounded by Maherbal's forces, and obliged next day to ſurrender at diſcretion; and this diſaſter, happening within a few days after the defeat at the lake Thraſymenus, almoſt gave the finiſhing ſtroke to the Roman affairs.

Carthage. 114 A Roman detachment cut to pieces or taken.

The Carthaginian army was now ſo much troubled with a ſcorbutic diſorder, owing to the unwholeſome encampments they had been obliged to make, and the moraſſes they had paſſed through, that Hannibal found it abſolutely neceſſary to repoſe them for ſome time in the territory of Adria, a moſt pleaſant and fertile country. In his various engagements with the Romans, he had taken a great number of their arms, with which he now armed his men after the Roman manner. Being now likewiſe maſter of that part of the country bordering on the ſea, he found means to ſend an expreſs to Carthage with the news of the glorious progreſs of his arms. The citizens received this news with the moſt joyful acclamations, at the ſame time coming to a reſolution to reinforce their armies both in Italy and Spain, with a proper number of troops.

115 Fabius Maximus named dictator.

The Romans being now in the utmoſt conſternation, named a dictator, as was their cuſtom in times of great danger. The perſon they choſe to this office was Fabius Maximus, ſurnamed *Verruſcoſus*; a man as cool and cautious as Sempronius and Flaminius were warm and impetuous. He ſet out with a deſign not to engage Hannibal, but only to watch his motions and cut off his proviſions, which he knew was the moſt proper way to deſtroy him in a country ſo far from his own. Accordingly he followed him through Umbria and Picenum, into the territory of Adria, and then through the territories of the Marrucini, and Frentani, into Apulia. When the enemy marched, he followed them: when they encamped, he did the ſame: but for the moſt part on eminences, and at ſome diſtance from their camp, watching all their motions, cutting off their ſtragglers, and keeping them in a continual alarm. This cautious method of proceeding greatly diſtreſſed the Carthaginians, but at the ſame time raiſed diſcontents in his own army. But neither theſe diſcontents, nor the ravages committed by Hannibal, could prevail upon Fabius to alter his meaſures. The former, therefore, entered Campania, one of the fineſt countries of Italy. The ravages he committed there raiſed ſuch complaints in the Roman army, that the dictator, for fear of irritating his ſoldiers, was obliged to pretend a deſire of coming to an engagement. Accordingly he followed Hannibal with more expedition than uſual; but at the ſame time avoided, under various pretences, an engagement with more care than the enemy ſought it. Hannibal finding he could not by any means bring the dictator to a battle,

reſolved

Carthage. resolved to quit Campania, which he found abounding more with fruit and wine than corn, and to return to Samnium through the pass called Eribanus. Fabius concluding from his march that this was his design, got there before him, and encamped on Mount Callicula, which commanded the pass, after having placed several bodies in all the avenues leading to it.

116 He is outwitted by Hannibal. Hannibal was for some time at a loss what to do; but at last contrived the following stratagem, which Fabius could not foresee nor guard against. Being encamped at the foot of Mount Callicula, he ordered Asdrubal to pick out of the cattle taken in the country 2000 of the strongest and nimblest oxen, to tie faggots to their horns, and to have them and the herdsmen ready without the camp. After supper, when all was quiet, the cattle were brought in good order to the hill, where Fabius had placed some Roman parties in ambush to stop up the pass. Upon a signal given, the faggots on the horns of the oxen were set on fire; and the herdsmen, supported by some battalions armed with small javelins, drove them on quietly. The Romans seeing the light of the fires, imagined that the Carthaginians were marching by torch light. However, Fabius kept close in his camp, depending on the troops he had placed in ambuscade; but when the oxen, feeling the fire on their heads, began to run up and down the hills, the Romans in ambush thinking themselves surrounded on all sides, and climbing the ways where they saw least light, returned to their camp, leaving the pass open to Hannibal. Fabius, though rallied by his soldiers for being thus overreached by the Carthaginian, still continued to pursue the same plan, marched directly after Hannibal, and encamped on some eminences near him.

Soon after this, the dictator was recalled to Rome; and as Hannibal, notwithstanding the terrible ravages he had committed, had all along spared the lands of Fabius, the latter was suspected of holding a secret correspondence with the enemy. In his absence, Minucius, the general of the horse, gained some advantages, which greatly tended to increase the discontent with the dictator, insomuch that before his return Minucius was put upon an equal footing with himself. The general of the horse proposed that each should command his day; but the dictator chose rather to divide the army, hoping by that means to save at least a part of it. Hannibal soon found means to draw Minucius to an engagement, and by his masterly skill in laying ambushes, the Roman general was surrounded on every side, and would have been cut off with all his troops, had not Fabius hastened to his assistance, and relieved him. Then the two armies uniting, advanced in good order to renew the fight; but Hannibal, not caring to venture a second action, sounded a retreat, and retired to his camp; and Minucius, being ashamed of his rashness, resigned the command of the army to Fabius.

117 Minucius in great danger is relieved by Fabius.

118 The Romans utterly defeated at Cannæ. The year following, the Romans augmented their army to 87,000 men, horse and foot, under the command of Æmilius Paulus and Terentius Varro, the consuls for the year; and Hannibal being reduced to the greatest straits for want of provisions, resolved to leave Samnium, and penetrate into the heart of Apulia. Accordingly he decamped in the night; and by leaving fires burning, and tents standing in his camp, made the Romans believe for Carthage. some time that his retreat was only feigned. When the truth was discovered, Æmilius was against pursuing him; but in this he was seconded by few besides Servilius, one of the consuls of the preceding year; Terentius and all the other officers being obstinately bent on pursuing the enemy. They accordingly overtook them at Cannæ, till this time an obscure village in Apulia *. A battle ensued at this place, as memorable as any mentioned in history; in which the Romans, though almost double in number to the Carthaginians, were put to flight with most terrible slaughter; at least 45,000 of them being left dead on the field of battle, and 10,000 taken prisoners in the action or pursuit. The night was spent in Hannibal's camp in feasting and rejoicings, and next day in stripping the dead bodies of the unhappy Romans; after which the victorious general invested their two camps, where he found 4000 men.

* See *Cannæ*.

119 Consequences of this victory. The immediate consequence of this victory, as Hannibal had foreseen, was a disposition of that part of Italy called the Old Province, Magna Grecia, Tarentum, and part of the territory of Capua, to submit to him. The neighbouring provinces likewise discovered an inclination to shake off the Roman yoke, but wanted first to see whether Hannibal was able to protect them. His first march was into Samnium, being informed that the Hirpini and other neighbouring nations were disposed to enter into an alliance with the Carthaginians. He advanced to Compsa, which opened its gates to him. In this place he left his heavy baggage, as well as the immense plunder he had acquired. After which he ordered his brother Mago, with a body of troops destined for that purpose, to possess himself of all the fortresses in Campania, the most delicious province of Italy. The humanity Hannibal had all along shown the Italian prisoners, as well as the fame of the complete victory he had lately obtained, wrought so powerfully upon the Lucani, Bruttii, and Apulians, that they expressed an eager desire of being taken under his protection. Nay, even the Campanians themselves, a nation more obliged to the Romans than any in Italy, except the Latins, discovered an inclination to abandon their natural friends.

120 Capua submits to Hannibal. Of this the Carthaginian general receiving intelligence, he bent his march towards Capua, not doubting but that, by means of the popular faction there, he should easily make himself master of it; which accordingly happened. Soon after this place had made its submission, many cities of the Bruttii opened their gates to Hannibal, who ordered his brother Mago to take possession of them. Mago was then despatched to Carthage, with the important news of the victory at Cannæ, and the consequences attending it. Upon his arrival there, he acquainted the senate, that Hannibal had defeated six Roman generals, four of whom were consuls, one dictator, and the other general of horse to the dictator: that he had engaged six consular armies, killed two consuls, wounded one, and driven another out of the field, with scarce 50 men to attend him: that he had routed the general of the horse, who was of equal power with the consuls; and that the dictator was esteemed the only general fit to command an army, merely because he had not the courage to engage him: and as a demonstrative proof of what he advanced, he produced, according to some

121 Mago's account of Hannibal's success.

authors,

Carthage. authors, three buſhels and a half of gold rings, taken from knights and ſenators who had been killed in the various engagements.

122 Hannibal ſuperior to every other general mentioned in hiſtory.

Hitherto we have ſeen Hannibal ſurpriſingly victorious; and, indeed, if we conſider what he had already done, we ſhall find his exploits ſuperior to thoſe of any other general, either ancient or modern. Other commanders have been celebrated for victories gained over barbarous and uncivilized nations. Alexander the Great invaded and overran the empire of Perſia; but that kingdom was then ſunk in ſloth and effeminacy, ſo as to be an eaſy conqueſt: but had that great commander turned his arms againſt the weſtern nations, who were of a more martial diſpoſition, it is more than probable he had not conquered ſo eaſily. Hannibal, on the other hand, lived at a time when the Romans were not only the moſt powerful, but the moſt warlike nation in the whole world. That nation he attacked with an army of only 26,000 men, without reſources either for recruits, money, or proviſions, except what he could procure in the enemy's country. With theſe he had for three years reſiſted the Roman armies; which had been hitherto invincible by all other nations. Their armies had been commanded by generals of different tempers, diſpoſitions, and abilities: the loſſes they ſuſtained are by the Roman writers imputed to the faults of the generals themſelves; but experience had abundantly ſhown, that theſe commanders, with all their faults, were able to conquer the moſt warlike nations, when commanded by another than Hannibal. In the battles fought with the Romans he had deſtroyed 200,000 of their men, and taken 50,000 priſoners; yet from the time of the battle of Cannæ, the affairs of this great man totally declined. The reaſon of this is, by the Roman hiſtorians, ſaid to be, that when he put his army into winter quarters in Capua, he ſo enervated himſelf and his army by debaucheries in that place, that he became no longer capable of coping with the Roman forces. But this ſeems by no means to have been the caſe; for the Roman hiſtorians themſelves own, that, after the battle of Cannæ, he gave their armies many and terrible defeats, and took a great number of towns in their ſight.

123 Cauſe of the decline of his affairs.

The true reaſon of that reverſe of fortune which Hannibal now experienced, was his not having ſufficient reſources for recruiting his army. On the firſt news, indeed, of his ſucceſs at Carthage, a body of 4000 Numidian cavalry, 40 elephants, and 1000 talents of ſilver, were granted by the ſenate. A large detachment of Spaniſh forces was alſo appointed to follow them; and that theſe laſt might be ready in due time, Mago ſet out immediately for Spain to raiſe 20,000 foot and 4000 horſe there. Had this ample ſupply been ſent with proper expedition, it is by no means probable that the Romans would have had any occaſion to reflect upon Hannibal's conduct at Capua. That general would undoubtedly have obliged the haughty republic to ſubmit to the ſuperior force of his arms the next campaign. But, notwithſtanding the influence of the Barcinian faction at Carthage, Hanno and his adherents found means not only to retard the march of the ſupplies intended, but even to diminiſh their number. Mago, through the artifices of that infatuated party, could obtain an order for only 12,000 foot and 2500 horſe; and even with this inconſiderable body of troops he was ſent into Spain. Hannibal being thus deſerted by his country, found himſelf obliged to act on the defenſive; his army amounting to no more now than 26,000 foot and 9000 horſe. But though obliged to act in this manner, he was only hindered from conquering; the utmoſt efforts of the whole Roman power not being able to drive this ſmall army out of Italy for more than 14 years. Carthage.

124 Meaſures taken by the Romans.

The Romans, though greatly reduced, were not yet exhauſted. They were able ſtill to ſend two conſular armies into the field, fully recruited and in good order; and as neither the Gauls nor Italians were natural allies of the Carthaginians, they did not fail to abandon them on the firſt reverſe of fortune. After the Romans had recovered from the conſternation into which they were thrown by the defeat at Cannæ, they choſe a dictator, and recalled Marcellus, the conqueror of Syracuſe, from Sicily. All the young Romans, above 17 years of age, of what rank ſoever, were obliged to inliſt themſelves; as were alſo thoſe who had already ſerved their legal time. By this means four legions and 10,000 horſe were ſoon raiſed in the city. The allies of Rome, the colonies, and the municipia, furniſhed their contingence as uſual. To theſe were added 8000 of the youngeſt and ſtrongeſt ſlaves in the city. The republic purchaſed them of their maſters, but did not oblige them to ſerve without their own conſent, which they gave, by anſwering *Volo* "I am willing;" whence they were called *volones*, to diſtinguiſh them from the other troops. As the Romans, after the loſs of ſo many battles, had no ſwords, darts, or bucklers, left in their magazines, the *volones* were ſupplied with the arms which had been formerly taken from the enemy, and hung up in the public temples and porticoes. The finances of Rome were no leſs exhauſted: but this defect was ſupplied by the liberality of her citizens. The ſenators ſhowing the example, were followed firſt by the knights, and afterwards by all the tribes; who ſtripping themſelves of all the gold they had, brought it to the public treaſury. The ſenators only reſerved their rings, and the *bullæ* about their children's necks. As for the ſilver coin, it was now, for the firſt time, alloyed with copper, and increaſed in its value. Thus the finances were put into a good condition, and a competent army raiſed.

This was plainly the laſt effort the Romans could make; and could Hannibal have procured a ſufficient ſupply of men and money to enable him to cope with this army, and to break it as he had done the others before, there could have been no more reſiſtance made on their part. He began, however, to be in want of money; and to procure it, gave the Roman priſoners leave to redeem themſelves. Theſe unhappy men agreed to ſend ten of their body to Rome to negotiate their redemption; and Hannibal required no other ſecurity for their return but their oath. Carthalo was ſent at the head of them to make propoſals of peace; but upon the firſt news of his arrival, the dictator ſent a lictor to him, commanding him immediately to depart the Roman territory; and it was reſolved not to redeem the captives. Upon this Hannibal ſent the moſt conſiderable of them to Carthage; and of the reſt he made gladiators, obliging them to fight with one another,

125 They refuſe to treat of peace.

Carthage. another, even relations with relations, for the entertainment of the troops.

126 Aſdrubal defeated by the Romans in Spain.

All this time Cneius and Publius Scipio had carried on the war in Spain with great ſucceſs againſt the Carthaginians. Aſdrubal had been ordered to enter Italy with his army to aſſiſt Hannibal; but being defeated by the Romans, was prevented. The dictator and ſenate of Rome, encouraged by this news, carried on the preparations for the next campaign with the greateſt vigour, whilſt Hannibal remained inactive at Capua. This inaction, however, ſeems to have proceeded from his expectation of ſuccours from Africa, which never came, and which delay occaſioned his ruin. The Roman dictator now releaſed from priſon all criminals, and perſons confined for debt, who were willing to inliſt themſelves. Of theſe he formed a body of 6000 foot, armed with the broad ſwords and bucklers formerly taken from the Gauls. Then the Roman army, to the number of about 25,000 men, marched out of the city under the command of the dictator; while Marcellus kept the remains of Varro's army, amounting to about 15,000 men, at Caſilinum, in readineſs to march whenever there ſhould be occaſion.

Thus the Roman forces were ſtill ſuperior to thoſe of Hannibal; and as they now ſaw the neceſſity of following the example of Fabius Maximus, no engagement of any conſequence happened the firſt year after the battle of Cannæ. Hannibal made a fruitleſs attempt upon Nola, expecting it would be delivered up to him; but this was prevented by Marcellus, who had entered that city, and ſallying unexpectedly from three gates upon the Carthaginians, obliged them to retire in great confuſion, with the loſs of 5000 men. This was the firſt advantage that had been gained by the Romans where Hannibal had commanded in perſon, and raiſed the ſpirits of the former not a little. They were, however, greatly dejected, on hearing that the conſul Poſthumius Albinus, with his whole army, had been cut off by the Boii, as he was croſſing a foreſt. Upon this it was reſolved to draw all the Roman forces out of Gaul and other countries, and turn them againſt Hannibal; ſo that the Carthaginian ſtood daily more and more in need of thoſe ſupplies, which yet never arrived from Carthage. He reduced, however, the cities of Nuceria, Caſilinum, Petelia, Conſentia, Crotona, Locri, and ſeveral others in Great Greece, before the Romans gained any advantage over him, except that before Nola, already mentioned. The Campanians, who had eſpouſed the Carthaginian intereſt, raiſed an army of 14,000 of their own nation in favour of Hannibal, and put one Marius Alfius at the head of it; but he was ſurpriſed by the conſul Sempronius, who defeated and killed him, with 2000 of his men. It was now found that Hannibal had concluded a treaty of alliance, offenſive and defenſive, with Philip king of Macedon; but to prevent any diſturbance from that quarter, a Roman army was ſent to Macedon. Soon after this Marcellus defeated Hannibal in a pitched battle, having armed his men with long pikes uſed generally at ſea, and chiefly in boarding of ſhips; by which means the Carthaginians were pierced through, while they were totally unable to hurt their adverſaries with the ſhort javelins they carried. Marcellus purſued them cloſe; and before they got to their camp, killed 5000, and took 600 priſoners; loſing himſelf about 1000 men, who were trod down by the Numidian horſe, commanded by Hannibal in perſon. After this defeat the Carthaginian general found himſelf deſerted by 1200 of his beſt horſe, partly Spaniards, and partly Numidians, who had croſſed the Alps with him. This touched him ſo ſenſibly, that he left Campania, and retired into Apulia.

127 Marcellus gains an advantage over Hannibal.

128 Hannibal takes ſeveral cities.

129 He is defeated by Marcellus.

Carthage.

130 He is deſerted by a party of horſe.

The Romans ſtill continued to increaſe their forces; and Hannibal, not having the ſame reſources, found it impoſſible to act againſt ſo many armies at once. Fabius Maximus advanced into Campania, whither Hannibal was obliged to return in order to ſave Capua. He ordered Hanno, however, at the head of 17,000 foot and 1700 horſe, to ſeize Beneventum; but he was utterly defeated, ſcarce 2000 of his men being left alive. Hannibal himſelf, in the mean time, advanced to Nola, where he was again defeated by Marcellus. He now began to loſe ground; the Romans retook Caſilinum, Accua in Apulia, Arpi, and Aternum; but the city of Tarentum was delivered up to him by its inhabitants. The Romans then entered Campania, and ravaged the whole country, threatening Capua with a ſiege. The inhabitants immediately acquainted Hannibal with their danger; but he was ſo intent upon reducing the citadel of Tarentum, that he could not be prevailed upon to come to their aſſiſtance. In the mean time Hanno was again utterly defeated by Fulvius, his camp taken, and he himſelf forced to fly into Bruttium, with a ſmall body of horſe. The conſuls then advanced with a deſign to beſiege Capua in form. But in their way, Sempronius Gracchus, a man of great bravery, and an excellent general, was betrayed by a Lucanian and killed, which proved a very great detriment to the republic. Capua, however, was ſoon after inveſted on all ſides; and the beſieged once more ſent to Hannibal, who now came to their aſſiſtance with his horſe, his light-armed infantry, and 33 elephants. He found means to inform the beſieged of the time he deſigned to attack the Romans, ordering them to make a vigorous ſally at the ſame time. The Roman generals, Appius and Fulvius, upon the firſt news of the enemy's approach, divided their troops; Appius taking upon him to make head againſt the garriſon, and Fulvius to defend the intrenchments againſt Hannibal. The former found no difficulty in repulſing the garriſon; and would have entered the city with them, had he not been wounded at the very gate, which prevented him from purſuing his deſign. Fulvius found it more difficult to withſtand Hannibal, whoſe troops behaved themſelves with extraordinary reſolution. A body of Spaniards and Numidians had even the boldneſs to paſs the ditch, and in ſpite of all oppoſition, climbing the ramparts, penetrated into the Roman camp; but not being properly ſeconded by the reſt, they were all to a man cut in pieces. The Carthaginian general was ſo diſheartened at this, eſpecially after the garriſon was repulſed, that he ſounded a retreat, which was made in good order. His next attempt for the relief of Capua was to march to Rome, where he hoped his approach would ſtrike ſo much terror, that the armies would be called from before Capua; and that the Capuans might not be diſheartened by his ſudden departure, he found means

131 He is again defeated, and begins to loſe ground.

132 Capua beſieged by the Romans.

133 Hannibal in vain attempts to relieve it.

134 He marches to Rome.

Carthage. means to acquaint them with his deſign. The news of his approach cauſed great conſternation in the metropolis. Some of the ſenators were for calling all the armies in Italy into the neighbourhood of Rome, as thinking nothing leſs was able to reſiſt the terrible Carthaginian. But Fabius told them that Hannibal's deſign was not to take Rome, but relieve Capua; upon which Fulvius was recalled to Rome with 15,000 foot and 1000 horſe; and this obliged Hannibal again to retire. He then returned before Capua ſo ſuddenly that he ſurpriſed Appius in his camp, drove him out of it with the loſs of a great number of men, and obliged him to intrench himſelf on ſome eminences, where he expected to be ſoon joined by his colleague Fulvius. As Hannibal, however, now expected to have all the Roman forces upon him, he could do nothing more for the relief of Capua; which was of conſequence obliged to ſubmit to the Romans.

135 He ſurpriſes and defeats Appius.

136 Capua ſubmits to the Romans.

137 Centenius Penula defeated by Hannibal;

A little before the ſurrender of Capua, Hannibal came up with a Roman army commanded by one M. Centenius Penula, who had ſignalized himſelf on many occaſions as a centurion. This rath man, being introduced to the ſenate, had the aſſurance to tell them, that if they would truſt him with a body of only 5000 men, he would give a good account of Hannibal. They gave him 8000, and his army was ſoon increaſed to double that number. He engaged the Carthaginians on Hannibal's firſt offering him battle; but after an engagement of two hours, was defeated, himſelf and all his men being ſlain except about 1000. Soon after, having found means to draw the prætor Cneius Fulvius into an ambuſcade, Hannibal cut in pieces almoſt his whole army, conſiſting of 18,000 men. In the mean time Marcellus was making great progreſs in Samnium. The city of Salapia was betrayed to him; but he took other two by aſſault. In the laſt of theſe he found 3000 Carthaginians, whom he put to the ſword; and carried off 240,000 buſhels of wheat, and 110,000 of barley. This, however, was by no means a compenſation for the defeat which Hannibal ſoon after gave the proconſul Fulvius Centumalus, whom he ſurpriſed and cut off, with 13,000 of his men.

138 as alſo the prætor Fulvius.

139 and the proconſul Fulvius Centumalus.

After this defeat the great Marcellus advanced with his army to oppoſe Hannibal. Various engagements happened without any thing deciſive. In one of them the Romans are ſaid to have been defeated, and in another Hannibal; but notwithſtanding theſe, it was neither in the power of Marcellus, nor any other Roman general, totally to defeat or diſperſe the army commanded by Hannibal in perſon. Nay, in the eleventh year of the war, Hannibal found means to decoy into an ambuſcade and cut off the great Marcellus himſelf; the conſequence of which was, that the Romans were obliged to raiſe the ſiege of Locri, with the loſs of all their military engines.

140 Marcellus drawn into an ambuſcade and killed.

141 Carthaginian affairs totally ruined by the defeat of Aſdrubal.

Hitherto the Carthaginians, though no longer the favourites of fortune, had loſt but little ground; but now they met with a blow which totally ruined their affairs. This was the defeat of Aſdrubal, Hannibal's brother, who had left Spain, and was marching to his aſſiſtance. He croſſed the Pyrenees, without any difficulty; and, as the ſilver mines had ſupplied him with a very conſiderable quantity of treaſure, he not only prevailed upon the Gauls to grant him a paſſage through their territories, but likewiſe to furniſh him with a conſiderable number of recruits. Meeting with many favourable circumſtances to expedite his march, he arrived at Placentia ſooner than the Romans or even his brother Hannibal expected. Had he continued to uſe the ſame expedition with which he ſet out, and haſtened to join his brother, it would have been utterly impoſſible to have ſaved Rome; but, ſitting down before Placentia, he gave the Romans an opportunity of aſſembling all their forces to attack him. At laſt he was obliged to raiſe the ſiege, and began his march for Umbria. He ſent a letter to acquaint his brother of his intended motion; but the meſſenger was intercepted: and the two conſuls, joining their armies, with united forces fell upon the Carthaginians. As the latter were inferior both in numbers and reſolution, they were utterly defeated, and Aſdrubal was killed. About the ſame time, Hannibal himſelf is ſaid to have ſuffered ſeveral defeats, and was retired to Canuſium: but, on the fatal news of his brother's defeat and death, he was filled with deſpair, and retired to the extremity of Bruttium: where, aſſembling all his forces, he remained for a conſiderable time in a ſtate of inaction, the Romans not daring to diſturb him; ſo formidable did they eſteem him alone, though every thing about him went to wreck, and the Carthaginian affairs ſeemed not far from the verge of deſtruction. Livy tells us, that it was difficult to determine whether his conduct was more wonderful in proſperity or in adverſity. Notwithſtanding which, Bruttium being but a ſmall province, and many of its inhabitants being either forced into the ſervice, or forming themſelves into parties of banditti, ſo that a great part of it remained uncultivated, he found it a difficult matter to ſubſiſt there, eſpecially as no manner of ſupplies were ſent him from Carthage. The people there were as ſolicitous about preſerving their poſſeſſions in Spain, and as little concerned about the ſituation of affairs in Italy, as if Hannibal had met with an uninterrupted courſe of ſucceſs, and no diſaſter befallen him ſince he firſt entered that country. Carthage

142 The great progreſs of Scipio Africanus.

All their ſolicitude, however, about the affairs of Spain, was to no purpoſe; their generals, one after another, were defeated by the Romans. They had indeed cut off the two Scipios; but found a much more formidable enemy in the young Scipio, afterwards ſurnamed *Africanus*. He overthrew them in conjunction with Maſiniſſa king of Numidia; and the latter thereafter abandoned their intereſt. Soon after, Syphax, king of the Maſæſylii, was likewiſe perſuaded to abandon their party. Scipio alſo gave the Spaniſh Reguli a great overthrow, and reduced the cities of New Carthage, Gades, and many other important places. At laſt the Carthaginians began to open their eyes when it was too late. Mago was ordered to abandon Spain, and ſail with all expedition to Italy. He landed on the coaſt of Liguria with an army of 12,000 foot and 2000 horſe; where he ſurpriſed Genoa, and alſo ſeized upon the town and port of Savo. A reinforcement was ſent him to this place, and new levies went on very briſkly in Liguria; but the opportunity was paſt, and could not be recalled. Scipio having carried all before him in Spain, paſſed over into Africa, where he met with no enemy capable

143 Mago lands in Italy.

Carthage. of oppoſing his progreſs. The Carthaginians then, ſeeing themſelves on the brink of deſtruction, were
144 Scipio lands in Africa. obliged to recal their armies from Italy, in order to ſave their city. Mago, who had entered Inſubria, was
145 Mago and Hannibal recalled. defeated by the Roman forces there; and having retreated into the maritime parts of Liguria, met a courier who brought him orders to return directly to Carthage. At the ſame time, Hannibal was likewiſe recalled. When the meſſengers acquainted him with the ſenate's pleaſure, he expreſſed the utmoſt indignation and concern, groaning, gnaſhing his teeth, and ſcarce refraining from tears. Never baniſhed man, according to Livy, ſhowed ſo much regret in quitting his native country, as Hannibal did at going out of that of the enemy.

146 Hannibal's proceedings after his arrival in Africa. The Carthaginian general was no ſooner landed in Africa, than he ſent out parties to get proviſions for the army, and buy horſes to remount the cavalry. He entered into a league with the regulus of the Areacidæ, one of the Numidian tribes. Four thouſand of Syphax's horſe came over in a body to him; but as he did not think proper to repoſe any confidence in them, he put them all to the ſword, and diſtributed their horſes among his troops. Vermina, one of Syphax's ſons, and Maſetulus, another Numidian prince, likewiſe joined him with a conſiderable body of horſe. Moſt of the fortreſſes in Maſiniſſa's kingdom either ſurrendered to him upon the firſt ſummons, or were taken by force. Narce, a city of conſiderable note there, he made himſelf maſter of by ſtratagem. Tychæus, a Numidian regulus, and faithful ally of Syphax, whoſe territories were famous for an excellent breed of horſes, reinforcing him alſo with 2000 of his beſt cavalry, Hannibal advanced to Zama, a town above five days journey diſtant from Carthage, where he encamped. He thence ſent out ſpies to obſerve the poſture of the Romans. Theſe being brought to Scipio, he was ſo far from inflicting any puniſhment upon them, which he might have done by the laws of war, that he commanded them to be led about the camp, in order to take an exact ſurvey of
147 He has an interview with Scipio. it, and then diſmiſſed them. Hannibal admiring the noble aſſurance of his rival, ſent a meſſenger to deſire an interview with him: which, by means of Maſiniſſa, he obtained. The two generals, therefore, eſcorted by equal detachments of horſe, met at Nadagara, where, by the aſſiſtance of two interpreters, they held a private conference. Hannibal flattered Scipio in the moſt refined and artful manner, and expatiated upon all thoſe topics which he thought could influence that general to grant his nation a peace upon tolerable terms; amongſt other things, that the Carthaginians would willingly confine themſelves to Africa, ſince ſuch was the will of the gods, in order to procure a laſting peace, whilſt the Romans would be at liberty to extend their conqueſts to the remoteſt nations. Scipio anſwered, that that Romans were not prompted by ambition, or any ſiniſter views, to undertake either the former or preſent war againſt the Carthaginians, but by juſtice and a proper regard for their allies. He alſo obſerved, that the Carthaginians had, before his arrival in Africa, not only made him the ſame propoſals, but likewiſe agreed to pay the Romans 5000 talents of ſilver, reſtore all the Roman priſoners without ranſom, and deliver up all their galleys. He inſiſted on the perfidious conduct of the Carthaginians, who had broke a truce concluded Carthage with them; and told him, that, ſo far from granting them more favourable terms, they ought to expect more rigorous ones; which if Hannibal would ſubmit to, a peace would enſue; if not, the deciſion of the diſpute muſt be left to the ſword.

148 The battle of Zama. This conference, betwixt two of the greateſt generals the world ever produced, ending without ſucceſs, they both retired to their reſpective camps; where they informed their troops, that not only the fate of Rome and Carthage, but that of the whole world, was to be determined by them the next day. An engagement enſued *, in which, as Polybius informs us, the ſurpriſing military genius of Hannibal diſplayed itſelf in an extraordinary manner. Scipio likewiſe, according to Livy, paſſed a high encomium upon him, on account of his uncommon capacity in taking advantages, the excellent arrangement of his forces, and the manner in which he gave his orders during the engagement. The Roman general, indeed, not only approved his conduct, but openly declared that it was ſuperior to his own. Nevertheleſs, being vaſtly inferior to the enemy in horſe, and the ſtate of Carthage obliging him to hazard a battle with
149 Hannibal totally routed. the Romans at no ſmall diſadvantage, Hannibal was utterly routed, and his camp taken. He fled firſt to Thon, and afterwards to Adrumentum, from whence he was recalled to Carthage; where being arrived, he adviſed his countrymen to conclude a peace with Scipio on whatever terms he thought proper to preſcribe.

* See Zama.

150 Peace concluded. Thus was the ſecond war of the Carthaginians with the Romans concluded. The conditions of peace were very humiliating to the Carthaginians. They were obliged to deliver up all the Roman deſerters, fugitive ſlaves, priſoners of war, and all the Italians whom Hannibal had obliged to follow him. They alſo delivered up all their ſhips of war, except ten triremes, all their tame elephants, and were to train up no more of theſe animals for the ſervice. They were not to engage in any war without the conſent of the Romans. They engaged to pay to the Romans, in 50 years, 10,000 Euboic talents, at equal payments. They were to reſtore to Maſiniſſa all they had uſurped from him or his anceſtors, and to enter into an alliance with him. They were alſo to aſſiſt the Romans both by ſea and land, whenever they were called upon ſo to do, and never to make any levies either in Gaul or Liguria. Theſe terms appeared ſo intolerable to the populace that they threatened to plunder and burn the houſes of the nobility; but Hannibal having aſſembled a body of 6000 foot and 500 horſe at Marthama, prevented an inſurrection, and by his influence completed the accommodation.

151 Carthaginians oppreſſed by Maſiniſſa. The peace between Carthage and Rome was ſcarcely ſigned, when Maſiniſſa unjuſtly made himſelf maſter of part of the Carthaginian dominions in Africa, under pretence that theſe formerly belonged to his family. The Carthaginians, through the villanous mediation of the Romans, found themſelves under a neceſſity of ceding theſe countries to that ambitious prince, and of entering into an alliance with him. The good underſtanding between the two powers continued for many years afterwards; but at laſt Maſiniſſa violated the treaties ſubſiſting betwixt him and the Carthaginian

Carthage. thaginian republic, and not a little contributed to its subversion.

After the conclusion of the peace, Hannibal still kept up his credit among his countrymen. He was intrusted with the command of an army against some neighbouring nations in Africa; but this being disagreeable to the Romans, he was removed from it, and raised to the dignity of prætor in Carthage. Here he continued for some time, reforming abuses, and putting the affairs of the republic into a better condition; but this likewise being disagreeable to the Romans, he was obliged to fly to Antiochus king of Syria. After his flight, the Romans began to look upon the Carthaginians with a suspicious eye; though to prevent every thing of this kind, the latter had ordered two ships to pursue Hannibal, had confiscated his effects, razed his house, and by a public decree declared him an exile. Soon after, disputes arising between the Carthaginians and Masiniſſa, the latter, notwithstanding the manifest iniquity of his proceedings, was supported by the Romans. That prince, grasping at further conquests, endeavoured to embroil the Carthaginians with the Romans, by asserting that the former had received ambassadors from Perseus king of Macedon; that the senate assembled in the temple of Æsculapius in the night time, in order to confer with them; and that ambassadors had been despatched from Carthage to Perseus, in order to conclude an alliance with him. Not long after this, Masiniſſa made an irruption into the province of Tysca, where he soon possessed himself of 70, or, as Appian will have it, 50 towns and castles. This obliged the Carthaginians to apply with great importunity to the Roman senate for redress, their hands being so tied up by an article in the last treaty, that they could not repel force by force, in case of an invasion, without their consent. Their ambassadors begged, that the Roman senate would settle once for all what dominions they were to have, that they might from thenceforth know what they had to depend upon; or if their state had any way offended the Romans, they begged that they would punish them themselves, rather than leave them exposed to the insults and vexations of so merciless a tyrant. Then prostrating themselves on the earth, they burst out into tears. But, notwithstanding the impression their speech made, the matter was left undecided; so that Masiniſſa had liberty to pursue his rapines, as much as he pleased. But whatever villanous designs the Romans might have with regard to the republic of Carthage, they affected to show a great regard to the principles of justice and honour. They therefore sent Cato, a man famous for committing enormities under the specious pretence of public spirit, into Africa, to accommodate all differences betwixt Masiniſſa and the Carthaginians. The latter very well knew their fate, had they submitted to such a mediation; and therefore appealed to the treaty concluded with Scipio, as the only rule by which their conduct and that of their adversary ought to be examined. This *unreasonable* appeal so incensed the righteous Cato, that he pronounced them a devoted people, and from that time resolved upon their destruction. For some time he was opposed by Scipio Nasica; but the people of Carthage, knowing the Romans to be their inveterate enemies, and reflecting upon the iniquitous

152 Hannibal flies to Antiochus.

153 Iniquitous proceedings of Masiniſſa and the Romans.

treatment they had met with from them ever since the commencement of their disputes with Masiniſſa, were under great apprehensions of a visit from them. To prevent a rupture as much as possible, by a decree of the senate, they impeached Asdrubal general of the army, and Carthalo, commander of the auxiliary forces, together with their accomplices, as guilty of high treason, for being the authors of the war against the king of Numidia. They sent a deputation to Rome, to discover what sentiments were entertained there of their late conduct, and to know what satisfaction the Romans required. These messengers meeting with a cold reception, others were despatched, who returned with the same success. This made the unhappy citizens of Carthage believe that their destruction was resolved upon; which threw them into the utmost despair. And indeed they had but too just grounds for such a melancholy apprehension, the Roman senate now discovering an inclination to fall in with Cato's measures. About the same time, the city of Utica, being the second in Africa, and famous for its immense riches, as well as its equally commodious and capacious port, submitted to the Romans. Upon the possession of so important a fortress, which, by reason of its vicinity to Carthage, might serve as a place of arms in the attack of that city, the Romans declared war against the Carthaginians without the least hesitation. In consequence of this declaration, the consuls M. Manlius Nepos, and L. Marcius Censorinus, were despatched with an army and fleet to begin hostilities with the utmost expedition. The land forces consisted of 80,000 foot and 4000 chosen horse; and the fleet of 50 quinqueremes, besides a vast number of transports. The consuls had secret orders from the senate not to conclude the operations but by the destruction of Carthage, without which, it was pretended, the republic could not but look upon all her possessions as insecure. Pursuant to the plan they had formed, the troops were first landed at Lilybæum in Sicily, from whence, after receiving a proper refreshment, it was proposed to transport them to Utica.

154 War declared by the Romans against Carthage.

The answer brought by the last ambassadors to Carthage had not a little alarmed the inhabitants of that city. But they were not yet acquainted with the resolutions taken at Rome. They therefore sent fresh ambassadors thither, whom they invested with full powers to act as they thought proper for the good of the republic, and even to submit themselves without reserve to the pleasure of the Romans. But the most sensible persons among them did not expect any great success from this condescension, since the early submission of the Uticans had rendered it infinitely less meritorious than it would have been before. However, the Romans seemed to be in some measure satisfied with it, since they promised them their liberty, the enjoyment of their laws, and in short, every thing that was dear and valuable to them. This threw them into a transport of joy, and they wanted words to extol the moderation of the Romans. But the senate immediately dashed all their hopes, by acquainting them that this favour was granted upon condition that they would send 300 young Carthaginian noblemen of the first distinction to the prætor Fabius at Lilybæum, within the space of 30 days, and comply with all the orders of the consuls. These hard terms

155 Ambassadors sent to Rome.

156 The Romans demand 300 hostages,

filled

Carthage. filled the whole city with inexpreſſible grief: but the hoſtages were delivered; and as they arrived at Lilybæum before the 30 days were expired, the ambaſſadors were not without hopes of ſoftening their hard-hearted enemy. But the conſuls only told them, that upon their arrival at Utica they ſhould learn the further orders of the republic.

The miniſters no ſooner received intelligence of the Roman fleet appearing off Utica, than they repaired thither, in order to know the fate of their city. The conſuls however did not judge it expedient to communicate all the commands of the republic at once, leſt they ſhould appear ſo harſh and ſevere, that the Carthaginians would have refuſed to comply with them. They firſt, therefore, demanded a ſufficient ſupply of corn for the ſubſiſtence of their troops. Secondly, That they ſhould deliver up into their hands all the triremes they were then maſters of. Thirdly, That they ſhould put them in poſſeſſion of all their military machines. And fourthly, That they ſhould immediately convey all their arms into the Roman camp.

157 and all the Carthaginian arms, military machines, &c.

As care was taken that there ſhould be a convenient interval of time betwixt every one of theſe demands, the Carthaginians found themſelves enſnared, and could not reject any one of them, though they ſubmitted to the laſt with the utmoſt reluctance and concern. Cenſorinus now imagining them incapable of ſuſtaining a ſiege, commanded them to abandon their city, or, as Zonaras will have it, to demoliſh it; permitting them to build another 80 ſtadia from the ſea, but without walls or fortifications. This terrible decree threw the ſenate and every one elſe into deſpair; and the whole city became a ſcene of horror, madneſs, and confuſion. The citizens curſed their anceſtors for not dying glorioufly in the defence of their country, rather than concluding ſuch ignominious treaties of peace, that had been the cauſe of the deplorable condition to which their poſterity was then reduced. At length, when the firſt commotion was a little abated, the ſenators aſſembled, and reſolved to ſuſtain a ſiege. They were ſtripped of their arms and deſtitute of proviſions; but deſpair raiſed their courage, and made them find out expedients. They took care to ſhut the gates of the city; and gathered together on the ramparts great heaps of ſtones, to ſerve them inſtead of arms in caſe of a ſurpriſe. They took the malefactors out of priſon, gave the ſlaves their liberty, and incorporated them in the militia. Aſdrubal was recalled, who had been ſentenced to die only to pleaſe the Romans; and he was invited to employ 20,000 men he had raiſed againſt his country in defence of it. Another Aſdrubal was appointed to command in Carthage; and all ſeemed reſolute, either to ſave their city or periſh in its ruins. They wanted arms; but, by order of the ſenate, the temples, porticoes, and all public buildings, were turned into workhouſes, where men and women were continually employed in making arms. As they encouraged one another in their work, and loſt no time in procuring to themſelves the neceſſaries of life, which were brought to them at ſtated hours, they every day made 144 bucklers, 300 ſwords, 1000 darts, and 500 lances and javelins. As to baliſtæ and catapultæ, they wanted proper materials for them; but their induſtry ſupplied that defect. Where

158 They command them to deſtroy their city.

159 The Carthaginians reſolve to ſuſtain a ſiege.

160 They make new arms.

iron and braſs were wanting, they made uſe of ſilver and gold, melting down the ſtatues, vaſes, and even the utenſils of private families; for, on this occaſion, even the moſt covetous became liberal. As tow and flax were wanting to make cords for working the machines, the women, even thoſe of the firſt rank, freely cut off their hair and dedicated it to that uſe. Without the walls, Aſdrubal employed the troops in getting together proviſions, and conveying them ſafe into Carthage; ſo that there was as great plenty there as in the Roman camp. Carthage.

In the mean time the conſuls delayed drawing near to Carthage, not doubting but the inhabitants, whom they imagined deſtitute of neceſſaries to ſuſtain a ſiege, would, upon cool reflection, ſubmit; but at length, finding themſelves deceived in their expectation, they came before the place and inveſted it. As they were ſtill perſuaded that the Carthaginians had no arms, they flattered themſelves that they ſhould eaſily carry the city by aſſault. Accordingly they approached the walls in order to plant their ſcaling ladders; but to their great ſurpriſe they diſcovered a prodigious multitude of men on the ramparts, ſhining in the armour they had newly made. The legionaries were ſo terrified at this unexpected ſight, that they drew back, and would have retired, if the conſuls had not led them on to the attack; which, however, proved unſucceſsful; the Romans, in ſpite of their utmoſt efforts, being obliged to give over the enterpriſe, and lay aſide all thoughts of taking Carthage by aſſault. In the mean time, Aſdrubal, having collected from all places ſubject to Carthage a prodigious number of troops, came and encamped within reach of the Romans, and ſoon reduced them to great ſtraits for want of proviſions. As Marcius, one of the Roman conſuls, was poſted near a marſh, the exhalations of the ſtagnating waters, and the heat of the ſeaſon, infected the air, and cauſed a general ſickneſs among his men. Marcius, therefore, ordered his fleet to draw as near the ſhore as poſſible, in order to tranſport his troops to a healthier place. Aſdrubal being informed of this motion, ordered all the old barks in the harbour to be filled with faggots, tow, ſulphur, bitumen, and other combuſtible materials; and then taking advantage of the wind, which blew towards the enemy, let them drive upon their ſhips, which were for the moſt part conſumed. After this diſaſter, Marcius was called home to preſide at the elections; and the Carthaginians looking upon the abſence of one of the conſuls to be a good omen, made a briſk ſally in the night; and would have ſurpriſed the conſul's camp, had not Æmilianus, with ſome ſquadrons, marched out of the gate oppoſite to the place where the attack was made, and, coming round, fell unexpectedly on their rear, and obliged them to return in diſorder to the city.

161 The city attacked by the Romans, who are repulſed.

162 Part of the Roman fleet deſtroyed.

Aſdrubal had poſted himſelf under the walls of a city named Nepheris, 24 miles diſtant from Carthage, and ſituated on a high mountain, which ſeemed inacceſſible on all ſides. From thence he made incurſions into the neighbouring country, intercepted the Roman convoys, fell upon their detachments ſent out to forage, and even ordered parties to inſult the conſular army in their camp. Hereupon the conſul reſolved to drive the Carthaginian from this advantageous poſt, and ſet out for Nepheris. As he drew near the hills, Aſdru-

bal

Carthage.

bal ſuddenly appeared at the head of his army in order of battle, and fell upon the Romans with incredible fury. The conſular army ſuſtained the attack with great reſolution; and Aſdrubal retired in good order to his poſt, hoping the Romans would attack him there. But the conſul, being now convinced of his danger, reſolved to retire. This Aſdrubal no ſooner perceived, than he ruſhed down the hill, and falling upon the enemy's rear, cut a great number of them in pieces. The whole Roman army was now ſaved by the bravery of Scipio Æmilianus. At the head of 300 horſe, he ſuſtained the attack of all the forces commanded by Aſdrubal, and covered the legions, while they paſſed a river in their retreat before the enemy. Then he and his companions threw themſelves into the ſtream, and ſwam acroſs it. When the army had croſſed the river, it was perceived that four manipuli were wanting; and ſoon after they were informed that they had retired to an eminence, where they reſolved to ſell their lives as dear as poſſible. Upon this news Æmilianus, taking with him a choſen body of horſe, and proviſions for two days, croſſed the river, and flew to the aſſiſtance of his countrymen. He ſeized a hill over againſt that on which the four manipuli were poſted; and, after ſome hours repoſe, marched againſt the Carthaginians who kept them inveſted; fell upon them at the head of his ſquadron with the boldneſs of a man determined to conquer or die; and, in ſpite of all oppoſition, opened a way for his fellow ſoldiers to eſcape. On his return to the army, his companions, who had given him over for loſt, carried him to his quarters in a kind of triumph; and the manipuli he had ſaved gave him a crown of *gramen*. By theſe and ſome other exploits, Æmilianus gained ſuch reputation, that Cato, who is ſaid never to have commended any body before, could not refuſe him the praiſes he deſerved; and is ſaid to have foretold that Carthage would never be reduced till Scipio Æmilianus was employed in that expedition.

163 The Roman army in great danger, is ſaved by Scipio Æmilianus.

The next year, the war in Africa fell by lot to the conſul L. Calpurnius Piſo; and he continued to employ Æmilianus in ſeveral important enterpriſes, in which he was attended with uncommon ſucceſs. He took ſeveral caſtles; and in one of his excurſions, found means to have a private conference with Phameas, general, under Aſdrubal, of the Carthaginian cavalry, and brought him over, together with 2200 of his horſe, to the Roman intereſt. Under the conſul Calpurnius Piſo himſelf, however, the Roman arms were unſucceſsful. He inveſted Clupea; but was obliged to abandon the enterpriſe, with the loſs of a great number of men killed by the enemy in their ſallies. From this place he went to vent his rage on a city newly built, and thence called *Neapolis*, which profeſſed a ſtrict neutrality, and had even a ſafeguard from the Romans. The conſul, however, plundered the place, and ſtripped the inhabitants of all their effects. After this he laid ſiege to *Hippagreta*, which employed the Roman fleet and army the whole ſummer; and, on the approach of winter, the conſul retired to Utica, without performing a ſingle action worth notice during the whole campaign.

164 He gains over the Carthaginian general of horſe.

The next year Scipio Æmilianus was choſen conſul, and ordered to paſs into Africa; and upon his arrival, the face of affairs was greatly changed. At the time

165 He is choſen conſul

of his entering the port of Utica, 3500 Romans were in great danger of being cut in pieces before Carthage. Theſe had ſeized Megalia, one of the ſuburbs of the city: but as they had not furniſhed themſelves with proviſions to ſubſiſt there, and could not retire, being cloſely inveſted on all ſides by the enemy's troops, the prætor Mancinus, who commanded this detachment, ſeeing the danger into which he had brought himſelf, deſpatched a light boat to Utica, to acquaint the Romans there with his ſituation. Æmilianus received this letter a few hours after his landing; and immediately flew to the relief of the beſieged Romans, obliged the Carthaginians to retire within their walls, and ſafely conveyed his countrymen to Utica. Having then drawn together all the troops, Æmilianus applied himſelf wholly to the ſiege of the capital.

Carthage.

166 Cruelties of Aſdrubal.

His firſt attack was upon Megalia; which he carried by aſſault, the Carthaginian garriſon retiring into the citadel of Byrſa. Aſdrubal, who had commanded the Carthaginian forces in the field, and was now governor of the city, was ſo enraged at the loſs of Megalia, that he cauſed all the Roman captives taken in the two years the war laſted, to be brought upon the ramparts, and thrown headlong, in the ſight of the Roman army, from the top of the wall; after having, with an exceſs of cruelty, commanded their hands and feet to be cut off, and their eyes and tongues to be torn out. He was of a temper remarkably inhuman; and it is ſaid that he even took pleaſure in ſeeing ſome of theſe unhappy men flayed alive. Æmilianus, in the mean time, was buſy in drawing lines of circumvallation and contravallation acroſs the neck of land which joined the iſthmus on which Carthage ſtood to the continent. By this means, all the avenues on the land ſide of Carthage being ſhut up, the city could receive no proviſions that way. His next care was to raiſe a mole in the ſea, in order to block up the old port, the new one being already ſhut up by the Roman fleet; and this great work he effected with immenſe labour. The mole reached from the weſtern neck of land, of which the Romans were maſters, to the entrance of the port; and was 90 feet broad at the bottom and 80 at the top. The beſieged, when the Romans firſt began this ſurpriſing work, laughed at the attempt; but were no leſs alarmed than ſurpriſed, when they beheld a vaſt mole appearing above water, and by that means the port rendered inacceſſible to ſhips, and quite uſeleſs. Prompted by deſpair, however, the Carthaginians, with incredible and almoſt miraculous induſtry, dug a new baſon, and cut a paſſage into the ſea, by which they could receive the proviſions that were ſent them by their troops in the field. With the ſame diligence and expedition, they fitted out a fleet of 50 triremes; which to the great ſurpriſe of the Romans, appeared ſuddenly advancing into the ſea through this new canal, and even ventured to give the enemy battle. The action laſted the whole day, with little advantage on either ſide. The day after, the conſul endeavoured to make himſelf maſter of a terrace which covered the city on the ſide next the ſea; and on this occaſion the beſieged ſignalized themſelves in a moſt remarkable manner. Great numbers of them, naked and unarmed, went into the water in the dead of the night, with unlighted torches in their hands; and having, partly by ſwimming, partly by wading, got within reach of the Roman

167 Carthage blocked up by ſea and land.

168 The beſieged dig a wide baſon.

169 They ſet fire to the Roman machines.

Carthage. Roman engines, they ſtruck fire, lighted their torches and threw them with fury againſt the machines. The ſudden appearance of theſe naked men, who looked like ſo many monſters ſtarted up out of the ſea, ſo terrified the Romans who guarded the machines, that they began to retire with the utmoſt confuſion. The conſul, who commanded the detachment in perſon, and had continued all night at the foot of the terrace, endeavoured to ſtop his men, and even ordered thoſe who fled to be killed. But the Carthaginians, perceiving the confuſion the Romans were in, threw themſelves upon them like ſo many wild beaſts; and having put them to flight only with their torches, they ſet fire to the machines, and entirely conſumed them.—This, however, did not diſcourage the conſul; he renewed the attack a few days after, carried the terrace by aſſault, and lodged 4000 men upon it. As this was an important poſt, becauſe it pent in Carthage on the ſea ſide, Æmilianus took care to fortify and ſecure it againſt the ſallies of the enemy; and then, winter approaching, he ſuſpended all further attacks upon the place till the return of good weather. During the winter ſeaſon, however, the conſul was not inactive. The Carthaginians had a very numerous army under the command of one Diogenes, ſtrongly encamped near Nepheris, whence convoys of proviſions were ſent by ſea to the beſieged, and brought into the new baſon. To take Nepheris, therefore, was to deprive Carthage of her chief magazine. This Æmilianus undertook, and ſucceeded in the attempt. He firſt forced the enemy's intrenchments, put 70,000 of them to the ſword, and made 10,000 priſoners; all the inhabitants of the country, who could not retire to Carthage, having taken refuge in this camp. After this he laid ſiege to Nepheris, which was reduced in 22 days. Aſdrubal being diſheartened by the defeat of the army, and touched with the miſery of the beſieged, now reduced to the utmoſt extremity for want of proviſions, offered to ſubmit to what conditions the Romans pleaſed, provided the city was ſpared; but this was abſolutely refuſed.

170 Vaſtſlaughter of the Carthaginians.

171 Cotho taken.

Early in the ſpring, Æmilianus renewed the ſiege of Carthage; and in order to open himſelf a way into the city, he ordered Lælius to attempt the reduction of Cotho, a ſmall iſland which divided the two ports. Æmilianus himſelf made a falſe attack on the citadel, in order to draw the enemy thither. This ſtratagem had the deſired effect: for the citadel being a place of the greateſt importance, moſt of the Carthaginians haſtened thither, and made the utmoſt efforts to repulſe the aggreſſors; but in the mean time Lælius having, with incredible expedition, built a wooden bridge over the channel which divided Cotho from the iſthmus, entered the iſland, ſcaled the walls of the fortreſs which the Carthaginians had built there, and made himſelf maſter of that important poſt. The proconſul, who was engaged before Byrſa, no ſooner underſtood, by the loud ſhouts of the troops of Lælius, that he had made himſelf maſter of Cotho, than he abandoned the falſe attack, and unexpectedly fell on the neighbouring gate of the city, which he broke down, notwithſtanding the ſhowers of darts that were inceſſantly diſcharged upon his men from the ramparts. As night coming on prevented him from proceeding farther, he made a lodgment within the gate, and waited there for the return of day, with a deſign to advance through the city to the citadel, and attack it on that ſide, which was but indifferently fortified. Purſuant to this deſign, at day break, he ordered 4000 freſh troops to be ſent from his camp; and having ſolemnly devoted to the infernal gods the unhappy Carthaginians, he began to advance at the head of his men through the ſtreets of the city, in order to attack the citadel. Having advanced to the market place, he found that the way to the citadel lay through three exceeding ſteep ſtreets. The houſes on both ſides were very high, and filled with Carthaginians, who overwhelmed the Romans as they advanced with darts and ſtones; ſo that they could not proceed till they had cleared them. To this end Æmilianus in perſon, at the head of a detachment, attacked the firſt houſe, and made himſelf maſter of it ſword in hand. His example was followed by the officers and ſoldiers, who went on from houſe to houſe, putting all they met with to the ſword. As faſt as the houſes were cleared on both ſides, the Romans advanced in order of battle towards the citadel; but met with a vigorous reſiſtance from the Carthaginians, who on this occaſion behaved with uncommon reſolution. From the market place to the citadel, two bodies of men fought their way every ſtep, one above on the roofs of the houſes, the other below in the ſtreets. The ſlaughter was inexpreſſibly great and dreadful. The air rung with ſhrieks and lamentations. Some were cut in pieces, others threw themſelves down from the tops of the houſes; ſo that the ſtreets were filled with dead and mangled bodies. But the deſtruction was yet greater, when the proconſul commanded fire to be ſet to that quarter of the town which lay next to the citadel. Incredible multitudes, who had eſcaped the ſwords of the enemy, periſhed in the flames, or by the fall of the houſes. After the fire, which laſted ſix days, had demoliſhed a ſufficient number of houſes, Æmilianus ordered the rubbiſh to removed, and a large area to be made, where all the troops might have room to act. Then he appeared with his whole army before Byrſa; which ſo terrified the Carthaginians, who had fled thither for refuge, that firſt of all 25,000 women, and then 30,000 men, came out of the gates in ſuch a condition as moved pity. They threw themſelves proſtrate before the Roman general, aſking no favour but life. This was readily granted, not only to them but to all that were in Byrſa except the Roman deſerters, whoſe number amounted to 900. Aſdrubal's wife earneſtly entreated her huſband to ſuffer her to join the ſuppliants, and carry with her to the proconſul her two ſons who were as yet very young; but the barbarian denied her requeſt, and rejected her remonſtrances with menaces. The Roman deſerters, ſeeing themſelves excluded from mercy, reſolved to die ſword in hand, rather than deliver themſelves up to the vengeance of their countrymen. Then Aſdrubal, finding them all reſolved to defend themſelves to the laſt breath, committed to their care his wife and children; after which, he in a moſt cowardly and mean-ſpirited manner, came and privately threw himſelf at the conqueror's feet. The Carthaginians in the citadel no ſooner underſtood that their commander had abandoned the place, than they threw open the gates, and put the Romans in poſſeſſion of Byrſa. They had now no

Carthage.

172 Romans enter the city.

173 Which is ſet on fire.

174 Cruelty and cowardice of Aſdrubal.

Carthage. no enemy to contend with but the 900 deſerters, who, being reduced to deſpair, retreated into the temple of Æſculapius, which was as a ſecond temple within the firſt. There the proconſul attacked them; and theſe unhappy wretches, finding there was no way to eſcape, ſet fire to the temple. As the flames ſpread, they retreated from one part of the building to another, till they got to the roof. There Aſdrubal's wife appeared in her beſt apparel, and having uttered the moſt bitter imprecations againſt her huſband, whom ſhe ſaw ſtanding below with Æmilianus, "Baſe coward (ſaid ſhe), the mean things thou haſt done to ſave thy life ſhall not avail thee: thou ſhalt die this inſtant, at leaſt in thy two children." Having thus ſpoken, ſhe ſtabbed both the infants with a dagger; and while they were yet ſtruggling for life, threw them both from the top of the temple, and then leaped down after them into the flames.

175 Aſdrubal's wife deſtroys herſelf and two children.

176 Carthage plundered,

Æmilianus delivered up the city to be plundered, but in the manner preſcribed by the Roman military law. The ſoldiers were allowed to appropriate to themelves all the furniture, utenſils, and braſs money, they ſhould find in private houſes; but all the gold and ſilver, the ſtatues, pictures, &c. were reſerved to be put into the hands of the quæſtors. On this occaſion the cities of Sicily, which had been often plundered by the Carthaginian armies, recovered a number of ſtatues, pictures, and other valuable monuments; among the reſt the famous brazen bull, which Phalaris had ordered to be caſt, and uſed as the chief inſtrument of his cruelty, was reſtored to the inhabitants of Agrigentum. As Æmilianus was greatly inclined to ſpare what remained of this ſtately metropolis, he wrote to the ſenate on the ſubject, from whom he received the following orders: 1. The city of Carthage, with Byrſa and Megalia, ſhall be entirely deſtroyed, and no traces of them left. 2. All the cities that have lent Carthage any aſſiſtance ſhall be diſmantled. 3. The territories of thoſe cities which have declared for the Romans ſhall be enlarged with lands taken from the enemy. 4. All the lands between Hippo and Carthage ſhall be divided among the inhabitants of Utica. 5. All the Africans of the Carthaginian ſtate, both men and women, ſhall pay an annual tribute to the Romans at ſo much per head. 6. The whole country, which was ſubject to the Carthaginian ſtate, ſhall be turned into a Roman province, and be governed by a prætor, in the ſame manner as Sicily. Laſtly, Rome ſhall ſend commiſſioners into Africa, there to ſettle jointly with the proconſul the ſtate of the new province. Before Æmilianus deſtroyed the city, he performed theſe religious ceremonies which were required on ſuch occaſions: he firſt ſacrificed to the gods, and then cauſed a plough to be drawn round the walls of the city. After this, the towers, ramparts, walls, and all the works which the Carthaginians had raiſed in the courſe of many ages, and at a vaſt expence, were levelled with the ground; and laſtly, fire was ſet to the edifices of the proud metropolis, which conſumed them all, not a ſingle houſe eſcaping the flames. Though the fire began in all quarters at the ſame time, and burnt with incredible fury, it continued for 17 days before all the buildings were conſumed.

177 and utterly deſtroyed.

Thus fell Carthage, about 146 years before the birth of Chriſt; a city whoſe deſtruction ought to be attributed more to the intrigues of an abandoned faction, compoſed of the moſt profligate part of its citizens, than to the power of its rival. The treaſure which Æmilianus carried off, even after the city had been delivered up to be plundered by the ſoldiers, was immenſe, Pliny making it to amount to 4,470,000 pounds weight of ſilver. The Romans ordered Carthage never to be inhabited again, denouncing dreadful imprecations againſt thoſe who, contrary to this prohibition, ſhould attempt to rebuild any part of it, eſpecially Byrſa and Megalia. Notwithſtanding this, however, about 24 years after, C. Gracchus, tribune of the people, in order to ingratiate himſelf with them, undertook to rebuild it; and, to that end conducted thither a colony of 6000 Roman citizens. The workmen, according to Plutarch, were terrified by many unlucky omens at the time they were tracing the limits and laying the foundations of the new city; which the ſenate being informed of, would have ſuſpended the attempt. But the tribune, little affected with ſuch preſages, continued to carry on the work, and finiſhed it in a few days. From hence it is probable that only a ſlight kind of huts were erected; but whether Gracchus executed his deſign, or the work was entirely diſcontinued, it is certain that Carthage was the firſt Roman colony ever ſent out of Italy. According to ſome authors, Carthage was rebuilt by Julius Cæſar; and Strabo, who flouriſhed in the reign of Tiberius, affirms it in his time to have been equal, if not ſuperior, to any other city in Africa. It was looked upon as the capital of Africa for ſeveral centuries after the commencement of the Chriſtian era. Maxentius laid it in aſhes about the ſixth or ſeventh year of Conſtantine's reign. Genſeric, king of the Vandals, took it A. D. 439; but about a century afterwards it was re-annexed to the Roman empire by the renowned Beliſarius. At laſt the Saracens, under Mohammed's ſucceſſors, towards the cloſe of the ſeventh century, ſo completely deſtroyed it, that there are now ſcarce any traces remaining.

Carthage. 178 Rebuilt.

179 Utterly deſtroyed by the Saracens.

At the commencement of the third Punic war, Carthage appears to have been one of the firſt cities in the world.—It was ſeated on a peninſula 360 ſtadia or 45 miles in circumference, joined to the continent by an iſthmus 23 ſtadia or three miles and a furlong in breadth. On the weſt ſide there projected from it a long tract of land half a ſtadium broad; which ſhooting out into the ſea, ſeparated it from a lake or moraſs, and was ſtrongly fortified on all ſides by rocks and a ſingle wall. In the middle of the city ſtood the citadel of Byrſa, having on the top of it a temple ſacred to Æſculapius, ſeated upon rocks on a very high hill, to which the aſcent was by 60 ſteps. On the ſouth ſide the city was ſurrounded by a triple wall, 30 cubits high; flanked all round by parapets and towers, placed at equal diſtances of 480 feet. Every tower had its foundation ſunk 32 feet deep, and was four ſtories high, though the walls were but two: they were arched; and, in the lower part, correſponding in depth with the foundation above-mentioned, were ſtalls large enough to hold 300 elephants, with their fodder, &c. Over theſe were ſtalls and other conveniences for 4000 horſes; and there was likewiſe room for lodging 20,000 foot and 4000 cavalry, without

180 Its ancient grandeur.

Carthage. in the leaſt incommoding the inhabitants. There were two harbours, ſo diſpoſed as to have a communication with one another. They had one common entrance 70 feet broad, and ſhut up with chains. The firſt was appropriated to the merchants; and included in it a vaſt number of places of refreſhment, and all kinds of accommodation for ſeamen. The ſecond, as well as the iſland of Cothon, in the midſt of it, was lined with large quays, in which were diſtinct receptacles for ſecuring and ſheltering from the weather 220 ſhips of war. Over theſe were magazines of all ſorts of naval ſtores. The entrance into each of theſe receptacles was adorned with two marble pillars of the Ionic order; ſo that both the harbour and iſland repreſented on each ſide two magnificent galleries. Near this iſland was a temple of Apollo, in which was a ſtatue of the god all of maſſy gold; and the inſide of the temple all lined with plates of the ſame metal, weighing 1000 talents. The city was 23 miles in circumference, and at the time we ſpeak of contained 700,000 inhabitants. Of their power we may have ſome idea, by the quantity of arms they delivered up to the Roman conſuls. The whole army was aſtoniſhed at the long train of carts loaded with them, which were thought ſufficient to have armed all Africa. At leaſt it is certain, that on this occaſion were put into the hands of the Romans 2000 catapultæ, 200,000 complete ſuits of armour, with an innumerable quantity of ſwords, darts, javelins, arrows, and beams armed with iron, which were thrown from the ramparts by the baliſtæ.

The character tranſmitted of the Carthaginians is extremely bad; but we have it only on the authority of the Romans, who being their implacable enemies, cannot be much relied upon. As to their religion, manners, &c, being much the ſame with the Phœnicians, of which they were a colony, the reader is referred for an account of theſe things to the article PHOENICIA.

On the ruins of Carthage there now ſtands only a ſmall village called *Melcha*. The few remains of Carthage conſiſt only of ſome fragments of walls and 17 ciſterns for the reception of rain water.

There are three eminences, which are ſo many maſſes of fine marbles pounded together, and were in all probability the ſites of temples and other diſtinguiſhed buildings. The preſent ruins are by no means the remains of the ancient city deſtroyed by the Romans; who after taking it entirely, eraſed it, and ploughed up the very foundations: ſo truly they adhered to the well-known advice perpetually inculcated by Cato the Elder, *Delenda eſt Carthago*. It was again rebuilt by the Gracchi family, who conducted a colony to repeople it: and continually increaſing in ſplendour, it became at length the capital of Africa under the Roman emperors. It ſubſiſted near 700 years after its firſt demolition, until it was entirely deſtroyed by the Saracens in the beginning of the 7th century.

It is a ſingular circumſtance that the two cities of Carthage and Rome ſhould have been built juſt oppoſite one to the other; the bay of Tunis and the mouth of the Tiber being in a direct line.

Littora littoribus contraria, fluctibus undas,
Arma armis. VIRG. Æn. iv. 627.

New CARTHAGE, a conſiderable town of Mexico, in the province of Coſta Rica. It is a very rich trading place. W. Long. 86. 7. N. Lat. 9. 5. Cartha-gena.

CARTHAGENA, a province of South America, and one of the moſt conſiderable in New Caſtile, on account of the great trade carried on by the capital; for the country itſelf is neither fertile, rich, nor populous. The capital city, called likewiſe *Carthagena*, is ſituated in W. Long. 77. N. Lat. 11. on a ſandy iſland, by moſt writers called a peninſula; which forming a narrow paſſage on the ſouth-weſt, opens a communication with that called *Tierra Bomba*, as far as *Bocca Chica*. The little iſland which now joins them was formerly the entrance of the bay; but it having been filled up by orders of the court, Bocca Chica became the only entrance: this, however, has been filled up ſince the attempt of Vernon and Wentworth, and the old paſſage again opened. On the north ſide the land is ſo narrow, that, before the wall was begun, the diſtance from ſea to ſea was only 35 toiſes; but afterwards enlarging, it forms another iſland on this ſide; ſo that, excepting thoſe two places, the whole city is entirely ſurrounded by ſalt water. To the eaſtward it has a communication, by means of a wooden bridge, with a large ſuburb called *Xemani*, built on another iſland, which is alſo joined to the continent by a bridge of the ſame materials. The fortifications both of the city and ſuburbs are built after the modern manner, and lined with freeſtone; and, in time of peace, the garriſon conſiſts of ten companies of 77 men each, beſides militia. The city and ſuburbs are well laid out, the ſtreets ſtraight, broad, uniform, and well paved. All the houſes are built of ſtone or brick, only one ſtory high, well contrived, neat, and furniſhed with balconies and lattices of wood, which is more durable in that climate than iron, the latter being ſoon corroded by the acrimonious quality of the atmoſphere. The climate is exceedingly unhealthy. The Europeans are particularly ſubject to the terrible diſeaſe called the *black vomit*, which ſweeps off multitudes annually on the arrival of the galleons. It ſeldom continues above three or four days; in which time the patient is either dead or out of danger, and if he recovers, is never ſubject to a return of the ſame diſtemper. —This diſeaſe has hitherto foiled all the art of the Spaniſh phyſicians; as has alſo the leproſy, which is very common here. At Carthagena, likewiſe, that painful tumour in the legs, occaſioned by the entrance of the *Dracunculus* or Guinea-worm, is very common and troubleſome. Another diſorder peculiar to this country, and to Peru, is occaſioned by a little inſect called *Nigua*, ſo extremely minute as ſcarce to be viſible to the naked eye. This inſect breeds in the duſt, inſinuates itſelf into the ſoles of the feet and the legs, piercing the ſkin with ſuch ſubtility, that there is no being aware of it, before it has made its way to the fleſh. If it is perceived in the beginning, it is extracted with little pain; but having once lodged its head, and pierced the ſkin, the patient muſt undergo the pain of an inciſion, without which a nidus would be formed, and a multitude of inſects ingendered, which would ſoon overſpread the foot and leg. One ſpecies of the *nigua* is venomous; and when it enters the toe, an inflammatory ſwelling, greatly reſembling a venereal bubo, takes place in the groin.

CARTHAGENA, a ſea port town of Spain, in the kingdom

Carthamus ‖ Cartilaginous.

kingdom of Murcia, and capital of a territory of the ſame name; built by Aſdrubal, a Carthaginian general, and named after Carthage. It has the beſt harbour in all Spain, but nothing elſe very conſiderable; the biſhop's ſee being transferred to Toledo. In 1706 it was taken by Sir John Leake: but the duke of Berwick retook it afterwards. W. Long. 0. 58. N. Lat. 37. 36.

CARTHAMUS. See Botany *Index*. The carthamus tinctorius is at preſent cultivated in many parts of Europe, and alſo in the Levant, from whence great quantities of it are annually imported into Britain for the purpoſes of dyeing and painting. The good quality of this commodity is in the colour, which is of a bright ſaffron hue: and in this the Britiſh carthamus very often fails; for if there happens much rain during the time the plants are in flower, the flowers change to a dark or dirty yellow, as they likewiſe do if the flowers are gathered with any moiſture remaining upon them.—The ſeeds of carthamus have been celebrated as a cathartic; but they operate very ſlowly, and for the moſt part diſorder the ſtomach and bowels, eſpecially when given in ſubſtance: triturated with diſtilled aromatic waters, they form an emulſion leſs offenſive, yet inferior in efficacy to the more common purgatives. They are eaten by a ſpecies of Egyptian parrot, which is very fond of them; to other birds or beaſts they would prove a mortal poiſon.

CARTHUSIANS, a religious order, founded in the year 1080, by one Brudo. The Carthuſians, ſo called from the deſert of *Chartreux*, the place of their inſtitution, are remarkable for the auſterity of their rule. They are not to go out of their cells, except to church, without leave of their ſuperior, nor ſpeak to any perſon without leave. They muſt not keep any portion of their meat or drink till next day; their beds are of ſtraw, covered with a felt; their clothing two hair cloths, two cowls, two pair of hoſe, and a cloak, all coarſe. In the refectory, they are to keep their eyes on the diſh, their hands on the table, their attention on the reader, and their hearts fixed on God. Women are not allowed to come into their churches. It is computed that there are 172 houſes of Carthuſians; whereof five are of *nuns*, who practice the ſame auſterities as the monks. They are divided into 16 provinces, each of which has two viſitors. There have been ſeveral canonized ſaints of this order, four cardinals, 70 archbiſhops and biſhops, and a great many very learned writers.

Carthusian Powder, the ſame with kermes mineral. See Kermes.

CARTILAGE, in *Anatomy*, a body approaching to the nature of bones; but lubricous, flexible, and elaſtic. See Anatomy *Index*.

Brit. Zool. iii. 75.

CARTILAGINOUS, in *Ichthyology*, a title given to all fiſh whoſe muſcles are ſupported by cartilages inſtead of bones: and comprehends the ſame genera of fiſh to which Linnæus has given the name of *amphibia nantes*: but the word *amphibia* ought properly to be confined to ſuch animals as inhabit both elements; and can live, without any inconvenience, for a conſiderable time, either on land or in water; ſuch as tortoiſes, frogs, and ſeveral ſpecies of lizards; and among the quadrupeds, hippopotami, &c. &c.

Many of the cartilaginous fiſh are viviparous, being excluded from an egg, which is hatched within them. The egg conſiſts of a white and a yolk; and is lodged in a caſe formed of a thick tough ſubſtance, not unlike ſoftened horn: ſuch are the eggs of the *ray* and *ſhark* kinds. Some again differ in this reſpect, and are oviparous; ſuch is the *ſturgeon*, and others. Cartmel, Carton.

They breathe either through certain apertures beneath, as in the *rays*; on their ſides, as in the *ſharks*, &c.; or on the top of the head, as in the *pipe fiſh*: for they have not covers to their gills like the bony fiſh.

CARTMEL, a town of Lancaſhire in England. It is ſeated among the hills called Cartmel-fells, not far from the ſea, and near the river Kent; adorned with a very handſome church, built in the form of a croſs like a cathedral. The market is well ſupplied with corn, ſheep, and fiſh. W. Long. 2. 43. N. Lat. 54. 15.

CARTON, or Cartoon, in *Painting*, a deſign drawn on ſtrong paper, to be afterwards chalked through, and transferred on the freſh plaſter of a wall to be painted in freſco. It is alſo uſed for a deſign coloured, for working in moſaic, tapeſtry, &c. The word is from the Italian *cartoni* (*carta* "paper," and *oni* "large,") denoting many ſheets of paper paſted on canvas, on which large deſigns are made, whether coloured or with chalks only. Of theſe many are to be ſeen at Rome, particularly by Domenichino. Thoſe by Andrea Mantegna, which are at Hampton Court, were made for paintings in the old ducal palace at Mantua. But the moſt famous performances of this ſort are,

The *Cartoons of Raphael*, ſo deſervedly applauded throughout Europe by all authors of refined taſte, and all true admirers of the art of deſign, for their various and matchleſs merit, particularly with regard to the invention, and to the great and noble expreſſion of ſuch a variety of characters, countenances, and moſt expreſſive attitudes, as they are differently affected and properly engaged, in every compoſition. Theſe cartoons are ſeven in number, and form only a ſmall part of the ſacred hiſtorical deſigns executed by this great artiſt, while engaged in the chambers of the Vatican under the auſpices of Popes Julius II. and Leo X. When finiſhed, they were ſent to Flanders, to be copied in tapeſtry, for adorning the pontifical apartments; which tapeſtries were not ſent to Rome till ſeveral years after the deceaſe of Raphael, and even in all probability were not finiſhed and ſent there before the terrible ſack of that city in the time of Clement VII. when Raphael's ſcholars had fled from thence, and none left to inquire after the original cartoons, which lay neglected in the ſtorerooms of the manufactory. The great revolution alſo which followed in the Low Countries prevented their being noticed amidſt the entire neglect of the works of art. It was therefore a moſt fortunate circumſtance that theſe ſeven eſcaped the wreck of the others, which were torn in pieces, and remain diſperſed as fragments in different collections. Theſe ſeven were purchaſed by Rubens for Charles I. and they have been ſo roughly handled from the firſt, that holes were pricked for the weavers to pounce the outlines, and other parts almoſt cut through in tracing alſo. In this ſtate perhaps they as fortunately eſcaped the ſale amongſt the royal collec-

Cartouche || Carucaturius.

tion, by the disproportioned appraisement of these seven at 300l. and the nine pieces, being the Triumph of Julius Cæsar, by Andrea Mantegna, appraised at 1000l. They seem to have been taken small notice of till King William built a gallery, purposely to receive them, at Hampton Court; whence they were moved, on their suffering from damps, to the Queen's Palace. They are now at Windsor Castle, and open to public inspection.

CARTOUCHE, in *Architecture* and *Sculpture*, an ornament representing a scroll of paper. It is usually a flat member, with wavings to represent some inscription, device, cipher, or ornament of armoury.—They are, in architecture, much the same as modillions; only these are set under the cornice in wainscotting, and those under the cornice at the eaves of a house.

CARTOUCHE, in the military art, a case of wood, about three inches thick at the bottom, girt with marline, holding about four hundred musket balls, besides six or eight balls of iron, of a pound weight, to be fired out of a hobit, for the defence of a pass, &c.

A cartouche is sometimes made of a globular form, and filled with a ball of a pound weight; and sometimes it is made for the guns, being of a ball of half or quarter a pound weight, according to the nature of the gun, tied in form of a bunch of grapes, on a tompion of wood, and coated over. These were made in the room of partridge-shot.

CARTRIDGE, in the military art, a case of pasteboard or parchment, holding the exact charge of a fire-arm. Those for muskets, carabines, and pistols, hold both the powder and ball for the charge; and those of cannon and mortars are usually in cases of pasteboard or tin, sometimes of wood, half a foot long, adapted to the caliber of the piece.

Cartridge-Box, a case of wood or turned iron, covered with leather, holding a dozen musket cartridges. It is worn upon a belt, and hangs a little lower than the right pocket hole.

CARTWRIGHT, William, an eminent divine and poet, born at Northway, near Tewksbury, in Gloucestershire, in September 1611. He finished his education at Oxford; afterwards went into holy orders, and became a most florid preacher in the university. In 1642, he had the place of succentor in the church of Salisbury; and, in 1643, was chosen junior proctor in the university. He was also metaphysical reader there. Wit, judgement, elocution, a graceful person and behaviour, occasioned that encomium of him from Dean Fell, "That he was the utmost that man could come to." He was an expert linguist; an excellent orator; and at the same time was esteemed an admirable poet. There are extant of his, four plays, and some poems. He died in 1643, aged 33.

CARVAGE, (*carvagium*,) the same with Carruage.

Henry III. is said to have taken carvage, that is, two marks of silver of every knight's fee, towards the marriage of his sister Isabella to the emperor. Carvage could only be imposed on tenants *in capite*.

Carvage also denotes a privilege whereby a man is exempted from the service of carrucage.

CARUCATURIUS, in ancient law books, he that held land in soccage, or by plough tenure.

CARUCATE. See Carrucate.

Carucate || Caruncula.

CARVER, a cutter of figures or other devices in wood. See Carving.

Carvers answer to what the Romans called *sculptores*, who were different from *cælatores*, or engravers, as these last wrought in metal.

Carver is also an officer of the table, whose business is to cut up the meat, and distribute it to the guests. The word is formed from the Latin *carptor*, which signifies the same. The Romans also called him *carpus*, sometimes *scissor*, *scindendi magister*, and *structor*.

In the great families at Rome, the carver was an officer of some figure. There were masters to teach them the art regularly, by means of figures of animals cut in wood. The Greeks also had their carvers, called διατρεῖς, q. d. *deribitores*, or *distributors*. In the primitive times, the master of the feast carved for all his guests. Thus in Homer, when Agamemnon's ambassadors were entertained at Achilles's table, the hero himself carved the meat. Of latter times, the same office on solemn occasions was executed by some of the chief men of Sparta. Some derive the custom of distributing to every guest his portion, from those early ages when the Greeks first left off feeding on acorns, and learned the use of corn: The new diet was so great a delicacy, that to prevent the guests from quarrelling about it, it was found necessary to make a fair distribution.

In Scotland, the king has a hereditary carver in the family of Anstruther.

CARUI, or Carvi, in *Botany*. See Carum, Botany *Index*.

CARVING, in a general sense, the art or act of cutting or fashioning a hard body, by means of some sharp instrument, especially a chissel. In this sense carving includes statuary and engraving, as well as cutting in wood.

Carving, in a more particular sense, is the art of engraving or cutting figures in wood. In this sense *carving*, according to Pliny, is prior both to statuary and painting.

To carve a figure or design, it must be first drawn or pasted on the wood; which done, the rest of the block not covered by the lines of the design, are to be cut away with little narrow-pointed knives. The wood fittest for the use is that which is hard, tough, and close, as beech, but especially box: to prepare it for drawing the design on, they wash it over with white lead tempered in water; which better enables it either to bear ink or the crayon, or even to take the impression by chalking. When the design is to be pasted on the wood, this whitening is omitted, and they content themselves with seeing the wood well planed. Then wiping over the printed side of the figure with gum tragacanth dissolved in water, they clap it smooth on the wood, and let it dry: which done, they wet it slightly over, and fret off the surface of the paper gently, till all the strokes of the figure appear distinctly. This done, they fall to cutting or carving, as above.

CARUM. See Botany *Index*.

CARUNCULA, or Caruncle, in *Anatomy*, a term denoting a little piece of flesh, and applied to several parts of the human body. Thus,

Carunculæ Myrtiformes || Cary.

*Caruncul*æ *Myrtiformes*, in *Anatomy*, fleſhy knobs about the ſize of a myrtle berry, ſuppoſed to owe their origin to the breaking of the hymen. See Anatomy *Index*.

Caruncles, in the urethra, proceeding from a gonorrhœa, or an ulceration of the urethra, may be reduced by introducing the Bougie.

CARUS, a ſudden deprivation of ſenſe and motion, affecting the whole body. See Medicine *Index*.

Carus, *Marcus Aurelius*, was raiſed from a low ſtation, by his great merit, to be emperor of Rome in 282. He ſhowed himſelf worthy of the empire; ſubdued its enemies; and gave the Romans a proſpect of happy days, when he was unfortunately killed by lightning in 284.

CARWAR, a town of Aſia, on the coaſt of Malabar in the Eaſt Indies, and where the Eaſt India Company have a factory, fortified with two baſtions. The valleys about it abound in corn and pepper, which laſt is the beſt in the Eaſt Indies. The woods on the mountains abound with quadrupeds, ſuch as tigers, wolves, monkeys, wild hogs, deers, elks, and a ſort of beeves of a prodigious ſize. The religion of the natives is Paganiſm; and they have a great many ſtrange and ſuperſtitious cuſtoms. E. Long. 73. 7. N. Lat. 15. 0.

CARYA, -Æ, (Stephanus); *Caryæ*, *-arum*, (Pauſanias); a town of Laconia, between Sparta and the borders of Meſſenia; where ſtood a temple of Diana, thence called *Caryatis*, *-idis*,; whoſe annual feſtival, called *Carya*, *-orum*, was celebrated by Spartan virgins with dances. An inhabitant, *Caryates*, and *Caryatis*. *Caryatis apis* a Laconian bee, (Stephanus.)

Caryæ, *-arum*, in *Ancient Geography*, a place in Arcadia, towards the borders of Laconia. Whether from this of Arcadia, or that of Laconia, the *Columnæ caryatides* of Vitruvius and Pliny (which were ſtatues of matrons in ſtoles or long robes) took the appellation, is diſputed.

CARY, Lucius, Lord Viſcount Falkland, was born, in Oxfordſhire about the year 1610; a young nobleman of great abilities and accompliſhments. About the time of his father's death in 1633, he was made gentleman of the privy chamber to King Charles I. and afterwards ſecretary of ſtate. Before the aſſembling of the long parliament, he had devoted himſelf to literature, and every pleaſure which a fine genius, a generous diſpoſition, and an opulent fortune, could afford: when called into public life, he ſtood foremoſt in all attacks on the high prerogatives of the crown; but when civil convulſions came to an extremity, and it was neceſſary to chooſe a ſide, he tempered his zeal, and defended the limited powers that remained to monarchy. Still anxious, however, for his country, he ſeems to have dreaded equally the proſperity of the royal party, and that of the parliament; and among his intimate friends, often ſadly reiterated the word *peace*. This excellent nobleman freely expoſed his perſon for the king in all hazardous enterpriſes, and was killed in the 34th year of his age at the battle of Newberry. In Wellwood's Memoirs we are told, that whilſt he was with the king at Oxford, his majeſty went one day to ſee the public library, where he was ſhown among other books a Virgil, nobly printed, and exquiſitely bound. The Lord Falkland, to divert the king, would have his majeſty make a trial of his fortune by the Sortes Virgilianæ, an uſual kind of divination in ages paſt, made by opening a Virgil. The king opening the book, the paſſage which happened to come up, was that part of Dido's imprecation againſt Æneas, iv. 615, &c. which is thus tranſlated by Dryden.

Cary || Caryl.

" Oppreſs'd with numbers in th' unequal field,
" His men diſcourag'd, and himſelf expell'd;
" Let him for ſuccour ſue from place to place.
" Torn from his ſubjects and his ſon's embrace," &c.

King Charles ſeeming concerned at this accident, the Lord Falkland, who obſerved it, would likewiſe try his own fortune in the ſame manner; hoping he might fall upon ſome paſſage that could have no relation to his caſe, and thereby divert the king's thoughts from any impreſſion the other might make upon him: but the place Lord Falkland ſtumbled upon was yet more ſuited to his deſtiny than the other had been to the king's; being the following expreſſions of Evander, upon the untimely death of his ſon Pallas, Æn. xi. 152.

" O Pallas! thou haſt fail'd thy plighted word,
" To fight with caution, not to tempt the ſword,
" I warn'd thee, but in vain; for well I knew
" What perils youthful ardour would purſue;
" That boiling blood would carry thee too far;
" Young as thou wert in dangers, raw to war.
" O curſt eſſay of arms, diſaſtrous doom,
" Prelude of bloody fields and fights to come!"

He wrote ſeveral things both poetical and political; and in ſome of the king's declarations, ſuppoſed to be penned by Lord Falkland, we find the firſt regular definition of the Engliſh conſtitution that occurs in any compoſition publiſhed by authority. His predeceſſor, the firſt Viſcount Cary, was ennobled for being the firſt who gave King James an account of Queen Elizabeth's death.

Cary, *Robert*, a learned Engliſh chronologer, born in Devonſhire about the year 1615. On the Reſtoration, he was preferred to the archdeaconry of Exeter, but on ſome pretext was ejected in 1664, and ſpent the reſt of his days at his rectory of Portlemoth, where he died in 1688. He publiſhed *Palælogia Chronica*, a chronology of ancient times, in three parts, didactical, apodeictical, and canonical; and tranſlated the hymns of the church into Latin verſe.

CARYTES, in antiquity, a feſtival in honour of Diana ſurnamed *Caryatis*, held at Caryum, a city of Laconia. The chief ceremony was a certain dance ſaid to have been invented by Caſtor and Pollux, and performed by the virgins of the place. During Xerxes's invaſion, the Laconians not daring to appear and celebrate the cuſtomary ſolemnity, to prevent incurring the anger of the goddeſs by ſuch an intermiſſion, the neighbouring ſwains are ſaid to have aſſembled and ſung paſtorals or *bucoliſmi*, which is ſaid to have been the origin of *bucolic* poetry.

CARYATIDES, or Cariates. See Architecture.

CARYL, Joseph, a divine of the laſt century, bred at Oxford, and ſome time preacher to the ſociety of Lincoln's-Inn, an employment he filled with much applauſe. He became a frequent preacher before the long parliament, a licenſer of their books, one of the aſſembly

Caryl || Caryophyllus.

assembly of divines, and one of the triers for the approbation of ministers; in all which capacites he showed himself a man of considerable parts and learning, but with great zeal against the king's person and cause. On the restoration of Charles II. he was silenced by the act of uniformity, and lived privately in London, where, besides other works, he distinguished himself by a laborious *Exposition of the Book of Job;* and died in 1672.

CARYLL, John, a late English poet, was of the Roman Catholic persuasion, being secretary to Queen Mary the wife of James II. and one who followed the fortunes of his abdicating master; who rewarded him, first with knighthood, and then with the honorary titles of Earl Caryll and Baron Dartford. How long he continued in that service is not known; but he was in England in the reign of Queen Anne, and recommended the subject of the "Rape of the Lock" to Mr Pope, who at its publication addressed it to him. He was also the intimate friend of Pope's "Unfortunate Lady." He was the author of two plays: 1. "The English Princess, or the Death of Richard III. 1667," 4to.; 2. "Sir Salomon, or the Cautious Coxcomb, 1671," 4to; and in 1700, he published "The Psalms of David, translated from the Vulgate," 12mo. In Tonson's edition of Ovid's Epistles, that of "Briseis to Achilles" is said to be by Sir John Caryll; and in Nichols's Select Collection of Miscellany Poems, vol. ii. p. 1. the first eclogue of Virgil is translated by the same ingenious poet. He was living in 1717, and at that time must have been a very old man. See three of his letters in the "Additions to Pope," vol. ii. p. 114.

CARYOCAR, in *Botany;* a genus of the tetragynia order, belonging to the polyandria class of plants. The calyx is quinquepartite, the petals five, the styles more frequently four. The fruit is a plum, with nucleusses, and four furrows netted.

CARYOPHYLLÆI, in *Botany*, the name of a very numerous family or order in Linnæus's Fragments of a Natural Method; containing, besides the class of the same name in Tournefort, many other plants, which from their general appearance seem pretty nearly allied to it. The following are the genera, viz. Agrostema, Cucubalus, Dianthus, Drypis, Gypsophila, Lychnis, Saponaria, Silene, Velazia, Alsine, Arenaria, Bufonia, Cerastium, Cherleria, Glinus, Holosteum, Loeflingia, Mochringia, Polycarpon, Sagina, Spergula, Stellaria, Minuartia, Mollugo, Ortegia, Pharnaceum, Queria. All the plants of this order are herbaceous, and mostly annual. Some of the creeping kinds do not rise an inch, and the tallest exceed not seven or eight feet. See Botany, *Natural Orders*.

CARYOPHYLLUS, the Pink, in *Botany*. See Dianthus.

Caryophyllus, the Clove tree. See Botany *Index*.

The caryophyllus aromaticus is a native of the Molucca islands, particularly of Amboyna, where it is principally cultivated. The clove tree resembles, in its bark the olive, and is about the height of the laurel, which it also resembles in its leaves. No verdure is ever seen under it. It has a great number of branches, at the extremities of which are produced vast quantities of flowers, that are first white, then green, and at last pretty red and hard. When they arrive at this degree of maturity, they are, properly speaking, *cloves*. As they dry, they assume a dark yellowish cast; and when gathered, become of a deep brown. The season for gathering the cloves is from October to February. The boughs of the trees are then strongly shaken, or the cloves beat down with long reeds. Large cloths are spread to receive them, and they are afterwards either dried in the sun or in the smoke of the bamboo cane. The cloves which escape the notice of those who gather them, or are purposely left upon the tree, continue to grow till they are about an inch in thickness; and these falling off, produce new plants, which do not bear in less than eight or nine years. Those which are called *mother cloves* are inferior to the common sort; but are preserved in sugar by the Dutch; and in long voyages, eaten after their meals, to promote digestion. Caryophyllus.

The clove, to be in perfection, must be full sized, heavy, oily, and easily broken; of a fine smell, and of a hot aromatic taste, so as almost to burn the throat. It should make the fingers smart when handled, and leave an oily moisture upon them when pressed. In the East Indies, and in some parts of Europe, it is so much admired as to be thought an indispensable ingredient in almost every dish. It is put into their food, liquors, wines, and enters likewise the composition of their perfumes. Considered as medicines, cloves are very hot stimulating aromatics, and possess in an eminent degree the general virtues of substances of this class. Their pungency resides in their resin; or rather in a combination of resin with essential oil: for the spirituous extract is very pungent; but if the oil and the resin contained in this extract are separated from each other by distillation, the oil will be very mild; and any pungency which it does retain, proceeds from some small portion of adhering resin, and the remaining resin will be insipid. No plant, or part of any plant, contains such a quantity of oil as cloves do. From 16 ounces Newman obtained by distillation two ounces and two drachms, and Hoffmann obtained an ounce and a half of oil from two ounces of the spice. The oil is specifically heavier than water. Cloves acquire weight by imbibing water; and this they will do at some considerable distance. The Dutch, who trade in cloves, make a considerable advantage by knowing this secret. They sell them always by weight; and when a bag of cloves is ordered, they hang it, for several hours before it is sent in, over a vessel of water, at about two feet distance from the surface. This will add many pounds to the weight, which the unwary purchaser pays for on the spot. This is sometimes practised in Europe, as well as in the Spice Islands; but the degree of moisture must be more carefully watched in the latter; for there a bag of cloves will, in one night's time, attract so much water, that it may be pressed out of them by squeezing, them with the hand.

The clove tree is never cultivated in Europe. At Amboyna the Company have allotted the inhabitants 4000 parcels of land, on each of which they were at first allowed, and about the year 1720 compelled, to plant about 125 trees, amounting in all to 500,000. Each of these trees produces annually, on an average, more than two pounds of cloves; and consequently the collective produce must weigh more than a million

Caryota || Caſas.

lion. The cultivator is paid with the ſpecie that is conſtantly returned to the Company, and receives ſome unbleached cottons which are brought from Coromandel.

CARYOTA. See Botany *Index*.

CASA, in ancient and middle-age writers, is uſed to denote a cottage or houſe.

Casa Santa, denotes the chapel of the holy virgin at Loretto.—The *Santa Caſa* is properly the houſe, or rather chamber, in which the bleſſed virgin is ſaid to have been born, where ſhe was betrothed to her ſpouſe Joſeph, where the angel ſaluted her, the Holy Ghoſt overſhadowed her, and by conſequence where the Son of God was conceived or incarnated. Of this building the Catholics tell many wonderful ſtories too childiſh to tranſcribe. The *Santa Caſa* or holy chamber conſiſts of one room, forty-four ſpans long, eighteen broad, and twenty-three high. Over the chimney, in a niche, ſtands the image called the great *Madona* or Lady, four feet high, made of cedar, and, as they ſay, wrought by St Luke, who was a carver as well as a phyſician. The mantle or robe ſhe has on, is covered with innumerable jewels of ineſtimable value. She has a crown, given her by Louis XIII. of France, and a little crown for her ſon.

CASAL, a ſtrong town of Italy in Montferrat, with a citadel and a biſhop's ſee. It was taken by the French from the Spaniards in 1640; and the duke of Mantua ſold it to the French in 1681. In 1695 it was taken by the Allies, who demoliſhed the fortifications; but the French retook it, and fortified it again. The king of Sardinia became maſter of it in 1706, from whom the French took it in 1745; however the king of Sardinia got poſſeſſion again in 1746. It is ſeated on the river Po, in E. Long. 8. 37. N. Lat. 54. 7.

Casal-Maggiore, a ſmall ſtrong town of Italy, in the duchy of Milan, ſeated on the river Po. E. Long. 11. 5. N. Lat. 45. 6.

CASA-NOVA, Marc Antony, a Latin poet, born at Rome, ſucceeded particularly in epigrams. The poems he compoſed in honour of the illuſtrious men of Rome are alſo much eſteemed. He died in 1527.

CASAN, a conſiderable town of Aſia, and capital of a kingdom of the ſame name in the Ruſſian empire, with a ſtrong caſtle, a citadel, and an archbiſhop's ſee. The country about it is very fertile in all ſorts of fruits, corn, and pulſe. It carries on a great trade in furs, and furniſhes wood for the building of ſhips. The kingdom of Caſan is bounded on the north by Permia, on the eaſt by Siberia, on the ſouth by the river Wolga, and on the weſt by the province of Moſcow. E. Long. 53. 25 N. Lat. 55. 38.

CASAS, Bartholomew de las, biſhop of Chiapa, diſtinguiſhed for his humanity and zeal for the converſion of the Indians, was born at Seville in 1474; and went with his father who ſailed to America with Chriſtopher Columbus in 1493. At his return to Spain, he embraced the ſtate of an eccleſiaſtic, and obtained a curacy in the iſland of Cuba: but ſome time after quitted his cure in order to procure liberty for the Indians, whom he ſaw treated by the Spaniards in the moſt cruel and barbarous manner, which naturally gave them an unconquerable averſion to Chriſtianity. Bartholomew exerted himſelf with extraordinary zeal, for 50 years together, in his endeavours to perſuade the Spaniards that they ought to treat the Indians with equity and mildneſs; for which he ſuffered a number of perſecutions from his countrymen. At laſt the court, moved by his continual remonſtrances, made laws in favour of the Indians, and gave orders to the governors to obſerve them, and ſee them executed*. He died at Madrid in 1566, aged 92. He wrote ſeveral works, which breathe nothing but humanity and virtue. The principal of them are 1. An account of the deſtruction of the Indies. 2. Several treatiſes in favour of the Indies, againſt Dr Sepulveda, who wrote a book to juſtify the inhuman barbarities committed by the Spaniards. 3. A very curious, and now ſcarce, work in Latin, on this queſtion, "Whether kings or princes can, conſiſtently with conſcience, or in virtue of any right or title, alienate their ſubjects, and place them under the dominion of another ſovereign?"

Caſati, Caſaubon.

* See the article *Mexico*.

CASATI, Paul, a learned Jeſuit, born at Placentia in 1617, entered early among the Jeſuits; and after having taught mathematics and divinity at Rome, was ſent into Sweden to Queen Chriſtina, whom he prevailed on to embrace the Popiſh religion. He wrote, 1. *Vacuum proſcriptum*. 2. *Terra machinis mota*. 3. *Mechanicorum, libri octo*. 4. *De Igne Diſſertationes*; which is much eſteemed. 5. *De Angelis Diſputatio Theolog*. 6. *Hydroſtaticæ Diſſertationes*. 7. *Opticæ Diſputationes*. It is remarkable that he wrote this treatiſe on optics at 88 years of age, and after he was blind. He alſo wrote ſeveral books in Italian.

CASAUBON, Isaac, was born at Geneva in 1559; and Henry IV. appointed him his library keeper in 1603. After this prince's death, he went to England with Sir Henry Wotton, ambaſſador from King James I. where he was kindly received and engaged in writing againſt Baronius's annals. He died not long after this, in 1614; and was interred in Weſtminſter-abbey, where a monument was erected to him. He was greatly ſkilled in the Greek, and in criticiſm; publiſhed ſeveral valuable commentaries; and received the higheſt eulogiums from all his cotemporaries.

Casaubon, *Meric*, a ſon of the preceding, was born at Geneva in 1599. He was bred at Oxford, and took the degree of maſter of arts in 1621. The ſame year he publiſhed a book in defence of his father againſt the calumnies of certain Roman Catholics; which gained him the favour of King James I. and a conſiderable reputation abroad. He was made prebendary of Canterbury by Archbiſhop Laud. In the beginning of the civil war he loſt all his ſpiritual promotions, but ſtill continued to publiſh excellent works. Oliver Cromwell, then lieutenant general of the parliament's forces, would have employed his pen in writing the hiſtory of the late war; but he declined it, owning that this ſubject would oblige him to make ſuch reflections as would be ungrateful, if not injurious, to his lordſhip. Notwithſtandng this anſwer, Cromwell, ſenſible of his worth, ordered three or four hundred pounds to be paid him by a bookſeller in London, whoſe name was Cromwell, on demand, without requiring from him any acknowledgement of his benefactor. But this offer he rejected, though his circumſtances were then mean. At the ſame time it was propoſed by his friend Mr Greaves,

Caſurina || Caſe.

Greaves, who belonged to the library at St James's, that, if Caſaubon would gratify Cromwell in the requeſt above mentioned, all his father's books, which were then in the royal library, having been purchaſed by King James, ſhould be reſtored to him, and a penſion of 300l. a-year paid to the family as long as the youngeſt ſon of Dr Caſaubon ſhould live; but this alſo was refuſed. He likewiſe refuſed handſome offers from Chriſtina queen of Sweden, being determined to ſpend the remainder of his life in England. At the Reſtoration he recovered all his preferments, and continued writing till his death in 1671. He was the author of an Engliſh tranſlation of Marcus Aurelius Antoninus's Meditations, and of Lucius Florus; editions of ſeveral of the claſſics, with notes; a treatiſe of uſe and cuſtom; a treatiſe of enthuſiaſm; with many other works; and he left a number of MSS. to the univerſity of Oxford.

CASURINA. See BOTANY *Index*.

CASCADE, a ſteep fall of water from a higher into a lower place. The word is French, formed of the Italian *caſcata*, which ſignified the ſame; of *caſcaro*, "to fall," and that from the Latin *cadere*.

Caſcades are either natural, as that at Tivoli, &c. or artificial, as thoſe of Verſailles, &c. and either falling with a gentle deſcent, as thoſe of Sceaux; or in form of a buffet, as at Trianon; or down ſteps, in form of a perron, as at St Cloud; or from baſon to baſon, &c.

CASCAIS, a town of Eſtremadura in Portugal, ſituated at the mouth of the river Tagus, 17 miles eaſt of Liſbon. W. Long. 10 15. N. Lat 38. 40.

CASCARILLA. See CLUTIA and CROTON.

CASE, among grammarians, implies the different inflections or terminations of nouns, ſerving to expreſs the different relations they bear to each other; and to the things they repreſent. See GRAMMAR.

CASE alſo denotes a receptacle for various articles; as a caſe of knives, of lancets, of piſtols, &c.

CASE, in printing, a large flat oblong frame placed aſlope, divided into ſeveral compartments or little ſquare cells; in each of which are lodged a number of types or letters of the ſame kind, whence the compoſitor takes them out, each as he needs it, to compoſe his matter. See PRINTING.

CASE is alſo uſed for a certain numerous quantity of divers things. Thus a caſe of crown glaſs contains uſually 24 tables, each table being nearly circular, and about three feet ſix inches diameter; of Newcaſtle glaſs, 35 tables; of Normandy glaſs, 25.

CASE Hardening of Iron, is a ſuperficial converſion of that metal into ſteel, by the ordinary method of converſion, namely, by cementation with vegetable or mineral coals. This operation is generally practiſed upon ſmall pieces of iron wrought into tools and inſtruments to which a ſuperficial converſion is ſufficient; and it may be performed conveniently by putting the pieces of iron to be caſe-hardened, together with the cement, into an iron box, which is to be cloſely ſhut and expoſed to a red heat during ſome hours. By this cementation a certain thickneſs from the ſurface of the iron will be converted into ſteel, and a proper hardneſs may be afterwards given by ſudden extinction of the heated pieces of converted iron in a cold fluid. See STEEL.

CASE Shot, in the military art, muſket balls, ſtones, old iron, &c. put into caſes, and ſhot out of great guns. Caſe || Caſhel.

CASEMENT, or CASEMATE, in *Architecture*, a hollow moulding, which ſome architects make one-ſixth of a circle, and others one fourth.

CASEMENT is alſo uſed in building, for a little moveable window, uſually within a larger, being made to open or turn on hinges.

CASERN, in fortification, lodgings built in garriſon towns, generally near the rampart, or in the waſte places of the town, for lodging ſoldiers of the garriſon. There are uſually two beds in each caſern for ſix ſoldiers to lie, who mount the guard alternately; the third part being always on duty.

CASERTA, an epiſcopal town of Italy, in the kingdom of Naples, and in the Terra de Lavoro, with the title of a duchy, ſeated at the foot of a mountain of the ſame name, in E. Long. 15. 5. N. Lat. 41. 5.

CASES, PETER-JAMES, of Paris, the moſt eminent painter of the French ſchool. The churches of Paris and of Varſailles abound with his works. He died in 1754, aged 79.

CASH, in a commercial ſtyle, ſignifies the ſtock or ready money which a merchant or other perſon has in his preſent diſpoſal to negotiate; ſo called from the French term *caiſſe*, i. e. "cheſt or coffer," for the keeping of money.

M. Savary ſhows that the management of the caſh of a company is the moſt conſiderable article, and that whereon its good or ill ſucceſs depends.

CASH-Book. See BOOK-KEEPING.

CASHEL, or CASHIL, a town of Ireland in the county of Tipperary, and province of Munſter, with an archbiſhop's ſee. The ruins of the old cathedral teſtify its having been an extenſive as well as handſome Gothic ſtructure, boldly towering on the celebrated rock of Caſhel, which taken together form a magnificent object, and bear honourable teſtimony to the labour and ingenuity, as well as the piety and zeal, of its former inhabitants. It is ſeen at a great diſtance, and in many directions. Adjoining it are the ruins of the chapel of Cormac M'Culinan, at once king and archbiſhop of Caſhel, ſuppoſed to have been the firſt ſtone building in Ireland; and ſeems, by its rude imitation of pillars and capitals, to have been copied after the Grecian architecture, and long to have preceded that which is uſually called *Gothic*. Cormac M'Culinan was a prince greatly celebrated by the Iriſh hiſtorians for his learning, piety, and valour. He wrote, in his native language, a hiſtory of Ireland, commonly called the *Pſalter of Caſhel*, which is ſtill extant, and contains the moſt authentic account we have of the annals of the country to that period, about the year 900. On the top of the rock of Caſhel, and adjoining the cathedral, is a lofty round tower, which proudly defied the too ſucceſsful attempts of Archbiſhop Price, who in this century unroofed and thereby demoliſhed the ancient cathedral founded by St Patrick. In the choir are the monuments of Myler Magrath, archbiſhop of this ſee, in the reign of Queen Elizabeth, and ſome other curious remains of antiquity. Caſhel was formerly the royal ſeat and metropolis of the kings of Munſter; and on the aſcent to the cathedral is a large ſtone on which

Caſhew nut || Caſhmire.

which every new king of Munſter was, as the inhabitants report from tradition, formerly proclaimed. Caſhel is at preſent but ſmall to what we may ſuppoſe it to have been in ancient days. The archbiſhop's palace is a fine building. Here is a very handſome market houſe, a ſeſſions houſe, the county infirmary, a charter ſchool for twenty boys and the ſame number of girls, and a very good barrack for two companies of foot. Dr Agar finiſhed a very elegant church which was begun by his predeceſſor. W. Long. 7. 36. N. Lat. 52. 16.

CASHEW NUT. See ANACARDIUM, BOTANY *Index*.

CASHIER, the caſh-keeper; he who is charged with the receiving and paying the debts of a ſociety.—In the generality of foundations, the caſhier is called *treaſurer*.

CASHIERS of the Bank, are officers who ſign the notes that are iſſued out, examine and mark them when returned for payment, &c.

CASHMIRE, a province of Aſia in the dominions of the Mogul. It is ſituated at the extremity of Hindoſtan, northward of Lahore, and is bounded on the one ſide by a ridge of the great Caucaſus, and on the other by the little Tartarian Thibet and Moultan. The extent of it is not very conſiderable; but being girt in by a zone of hills, and elevated very conſiderably above an arid plain, which ſtretches many miles around it, the ſcenes which it exhibits are wild and pictureſque. Rivers, hills, and valleys, charmingly diverſify the landſcape. Here, Mr Sullivan * informs us, a caſcade ruſhes from a foaming precipice; there a tranquil ſtream glides placidly along; the tinkling rill, too, ſounds amidſt the groves; and the feathered choriſters ſing the ſong of love, cloſe ſheltered in the glade.

* *Philoſophical Rhapſodies.*

At what time Caſhmire came under the dominion of the Mogul government, and how long, and in what manner it was independent, before it was annexed to the territories of the houſe of Timur, are points that are beyond our preſent purpoſe. Though inconſiderable as to its revenues, it was uniformly held in the higheſt eſtimation by the emperors of Hindoſtan. Thither they repaired in the plenitude of their greatneſs, when the affairs of ſtate would admit of their abſence; and there they diveſted themſelves of form and all the oppreſſive ceremony of ſtate. The royal manner of travelling to Caſhmire was grand, though tedious and unwieldy, and ſhowed, in an eminent degree, the ſplendour and magnificence of an eaſtern potentate. Aurengzebe, we are told, ſeldom began his march to that country, for a march certainly it was to be called, without an eſcort of 80,000 or 100,000 fighting men, beſides the gentlemen of his houſehold, the attendants of his ſeraglio, and moſt of his officers of ſtate. Theſe all continued with him during the time he was on the road, which generally was a month; but no ſooner was he arrived at the entrance of thoſe aerial regions, than, with a ſelect party of friends, he ſeparated from the reſt of his retinue, and with them aſcended the defiles which led him to his Eden.

The temperature of the air of Caſhmire, elevated as it is ſo much above the adjoining country, together with the ſtreams which continually pour from its mountains, enables the huſbandman to cultivate with ſucceſs the ſoil he appropriates to agriculture; whilſt the gardener's labour is amply repaid in the abundant produce of his fruit. In ſhort, nature wears her gayeſt clothing in this enchanting ſpot. The rivers ſupply the inhabitants with almoſt every ſpecies of fiſh; the hills yield ſweet herbage for the cattle: the plains are covered with grain of different denominations; and the woods are ſtored with variety of game. The Caſhmireans, according to our author, ſeem a race diſtinct from all others in the eaſt: Their perſons are more elegant, and their complexions more delicate and more tinged with red.

Caſmir || Caſk.

On the decadence of the Mogul power in Hindoſtan, Caſhmire felt ſome of the ravages of war. It is now however in peace; and the inhabitants are deſirous of keeping it ſo. They are ſprightly and ingenious, and have ſeveral curious manufactures much valued in India. They are all Mahometans or idolaters. Caſhmire is the capital town.

CASIMIR, the name of ſeveral kings of Poland. See (*Hiſtory of*) POLAND.

CASIMIR, *Matthias Sorbiewſki*, a Poliſh Jeſuit, born in 1597. He was a moſt excellent poet; and is, ſays M. Baillet, an exception to the general rule of Ariſtotle and the other ancients, which teaches us to expect nothing ingenious and delicate from northern climates. His odes, epodes, and epigrams, have been thought not inferior to thoſe of the fineſt wits of Greece and Rome. Dr Watts has tranſlated one or two of his ſmall pieces, which are added to his Lyric Poems. He died at Warſaw in 1640, aged 43. There have been many editions of his poems, the beſt of which is that of Paris, 1759.

CASING *of* TIMBER WORK, among builders, is the plaſtering the houſe all over the outſide with mortar, and then ſtriking it while wet, by a ruler, with the corner of a trowel, to make it reſemble the joints of freeſtone. Some direct it to be done upon heart-laths, becauſe the mortar would, in a little time, decay the ſap laths; and to lay on the mortar in two thickneſſes, viz. a ſecond before the firſt is dry.

CASK, or CASQUE, a piece of defenſive armour wherewith to cover the head and neck; otherwiſe called the *head-piece* and *helmet* *. The word is French, *caſque*, from *caſſicum* or *caſſicus*, a diminutive of *caſſis* "a helmet." Le Gendre obſerves, that anciently, in France, the gens d'armes all wore *caſks*. The king wore a *caſk* gilt; the dukes and counts ſilvered; gentlemen of extraction poliſhed ſteel; and the reſt plain iron.

* See *Helmet.*

The caſk is frequently ſeen on ancient medals, where we may obſerve great varieties in the form and faſhion thereof; as the Greek faſhion, the Roman faſhion, &c. F. Joubert makes it the moſt ancient of all the coverings of the head, as well as the moſt univerſal. Kings, emperors, and even gods themſelves, are ſeen therewith. That which covers the head of Rome has uſually two wings like thoſe of Mercury: and that of ſome kings is furniſhed with horns like thoſe of Jupiter Ammon; and ſometimes barely bulls or rams horns, to expreſs uncommon force.

CASK, in *Heraldry*, the ſame with helmet. See HERALDRY, N° 45.

CASK, a veſſel of capacity, for preſerving liquors of divers kinds; and ſometimes alſo dry goods, as ſugar, almonds,

Caſket, Caſlon.

almonds, &c.—A caſk of ſugar is a barrel of that commodity, containing from eight to eleven hundred weight. A caſk of almonds is about three hundred weight.

CASKET, in a general ſenſe, a little coffer or cabinet. See CABINET.

CASKETS, in the ſea language, are ſmall ropes made of ſinnet, and faſtened to gromets, or little rings upon the yards; their uſe is to make faſt the ſail to the yard when it is to be furled.

Biog. Brit. and *Anecdotes of Bowyer*, by Nichols.

CASLON, WILLIAM, eminent in an art of the greateſt conſequence to literature, the art of letter-founding, was born in 1692, in that part of the town of Hales Owen which is ſituated in Shropſhire. Though he juſtly attained the character of being the Coryphæus in that employment, he was not brought up to the buſineſs; and it is obſerved by Mr Mores, that this handiwork is ſo concealed among the artificers of it, that he could not diſcover that any one had taught it to another, but every perſon who had uſed it had learned it of his own genuine inclination. Mr Caſlon ſerved a regular apprenticeſhip to an engraver of ornaments on gun barrels; and after the expiration of his term, carried on this trade in Vine-ſtreet, near the Minories. He did not, however, ſolely confine his ingenuity to that inſtrument, but employed himſelf likewiſe in making tools for the bookbinders, and for the chaſing of ſilver-plate. Whilſt he was engaged in this buſineſs, the elder Mr Bowyer accidentally ſaw, in a bookſeller's ſhop, the lettering of a book uncommonly neat; and inquiring who the artiſt was by whom the letters were made, was hence induced to ſeek an acquaintance with Mr Caſlon. Not long after, Mr Bowyer took Mr Caſlon to Mr James's foundery, in Bartholomew-cloſe. Caſlon had never before that time ſeen any part of the buſineſs; and being aſked by his friend, if he thought he could undertake to cut types, he requeſted a ſingle day to conſider the matter; and then replied that he had no doubt but he could. Upon this anſwer, Mr Bowyer, Mr Bettenham, and Mr Watts, had ſuch a confidence in his abilities, that they lent him 500l. to begin the undertaking, and he applied himſelf to it with equal aſſiduity and ſucceſs. In 1720, the ſociety for promoting Chriſtian knowledge, in conſequence of a repreſentation from Mr Solomon Negri, a native of Damaſcus in Syria, who was well ſkilled in the Oriental tongues, and had been profeſſor of Arabic in places of note, deemed it expedient to print, for the uſe of the Eaſtern churches, the New Teſtament and Pſalter, in the Arabic language. Theſe were intended for the benefit of the poor Chriſtians in Paleſtine, Syria, Meſopotamia, Arabia, and Egypt, the conſtitution of which countries did not permit the exerciſe of the art of printing. Upon this occaſion Mr Caſlon was pitched upon to cut the fount; in his ſpecimens of which he diſtinguiſhed it by the name of Engliſh Arabic. Under the farther encouragement of Mr Bowyer, Mr Bettenham, and Mr Watts, he proceeded with vigour in his employment; and he arrived at length to ſuch perfection, that he not only freed us from the neceſſity of importing types from Holland, but in the beauty and elegance of thoſe made by him he ſo far exceeded the productions of the beſt artificers, that his workmanſhip was frequently exported to the continent. In ſhort, his foundery became, in proceſs of time, the moſt capital one that exiſts in this or in foreign countries. Having acquired opulence in the courſe of his employment, he was put into the commiſſion of the peace for the county of Middleſex. Towards the latter end of his life, his eldeſt ſon being in partnerſhip with him, he retired in a great meaſure from the active execution of buſineſs. His death happened in January 1766.

Caſpian ſea.

CASPIAN SEA, a large lake of ſalt water in Aſia, bounded by the province of Aſtrakan on the north, and by part of Perſia on the ſouth, eaſt, and weſt. It is upwards of 400 miles long from ſouth to north, and 300 broad from eaſt to weſt. This ſea forms ſeveral gulfs, and embraces between Aſtrakan and Aſtrabad an incredible number of ſmall iſlands. Its bottom is mud, but ſometimes mixed with ſhells. At the diſtance of ſome German miles from land it is 500 fathoms deep; but on approaching the ſhore it is everywhere ſo ſhallow, that the ſmalleſt veſſels, if loaded, are obliged to remain at a diſtance.

When we conſider that the Caſpian is encloſed on all ſides by land, and that its banks are in the neighbourhood of very high mountains, we eaſily ſee why the navigation in it ſhould be perfectly different from that in every other ſea. There are certain winds that domineer over it with ſuch abſolute ſway, that veſſels are often deprived of every reſource; and in the whole extent of it there is not a port that can truly be called ſafe. The north, north-eaſt, and eaſt winds, blow moſt frequently, and occaſion the moſt violent tempeſts. Along the eaſtern ſhore the eaſt winds prevail; for which reaſon veſſels bound from Perſia to Aſtrakan always direct their courſe along this ſhore.

The ſurface of the Caſpian ſea is lower than the ocean. Although its extent is immenſe, the variety of its productions is exceedingly ſmall. This undoubtedly proceeds from its want of communication with the ocean, which cannot impart to it any portion of its inexhauſtible ſtores. But the animals which this lake nouriſhes multiply to ſuch a degree, that the Ruſſians, who alone are in condition to make them turn to account, juſtly conſider them as a never-failing ſource of profit and wealth. It will be underſtood that we ſpeak of the fiſh of the Caſpian, and of its fiſheries, which make the ſole occupation and principal trade of the people inhabiting the banks of the Wolga and of the Jaïk. This buſineſs is diſtinguiſhed into the great and leſſer fiſheries. The fiſh comprehended under the firſt diviſion, ſuch as the ſturgeon and others, abound in all parts of the Caſpian as well as in the rivers that communicate with it, and which they aſcend at ſpawning time. The ſmall fiſhes, ſuch as the ſalmon and many others, obſerve the general law of quitting the ſalt waters for the freſh; nor is there an inſtance of one of them remaining conſtantly in the ſea.

Seals are the only quadrupeds that inhabit the Caſpian; but they are there in ſuch numbers as to afford the means of ſubſiſtence to many people in that country as well as in Greenland. The varieties of the ſpecies are numerous, diverſified, however, only by the colour. Some are quite black, others quite white; there are ſome whitiſh, ſome yellowiſh, ſome of a mouſe colour, and ſome ſtreaked like a tiger. They crawl by means of their fore feet upon the iſlands, where they become the prey of the fiſhermen, who kill them

Caſpian ſea. them with long clubs. As ſoon as one is deſpatched, he is ſucceeded by ſeveral who come to the aſſiſtance of their unhappy companion, but come only to ſhare his fate. They are exceedingly tenacious of life, and endure more than thirty hard blows before they die. They will even live for ſeveral days after having received many mortal wounds. They are moſt terrified by fire and ſmoke; and as ſoon as they perceive them, retreat with the utmoſt expedition to the ſea. Theſe animals grow ſo very fat, that they look rather like oil bags than animals. At Aſtrakan is made a ſort of gray ſoap with their fat mixed with pot-aſhes, which is much valued for its property of cleanſing and taking greaſe from woollen ſtuffs. The greateſt numbers of them are killed in ſpring and autumn. Many ſmall veſſels go from Aſtrakan merely to catch ſeals.

If the Caſpian has few quadrupeds, it has in proportion ſtill fewer of thoſe natural productions which are looked upon as proper only to the ſea. There have never been found in it any zoophytes, nor any animal of the order of moluſca. The ſame may almoſt be ſaid of ſhells; the only ones found being three or four ſpecies of cockle, the common muſcle, ſome ſpecies of ſnails, and one or two others.

But to compenſate this ſterility, it abounds in birds of different kinds. Of thoſe that frequent the ſhores there are many ſpecies of the gooſe and duck kind, of the ſtork and heron, and many others of the wader tribe. Of birds properly aquatic, it contains the grebe, the creſted diver, the pelican, the cormorant, and almoſt every ſpecies of gull. Crows are ſo fond of fiſh, that they haunt the ſhores of the Caſpian in prodigious multitudes.

The waters of this lake are very impure, the great number of rivers that run into it, and the nature of its bottom, affecting it greatly. It is true, that in general the waters are ſalt; but though the whole weſtern ſhore extends from the 46th to the 35th degree of north latitude; and though one might conclude from analogy that theſe waters would contain a great deal of ſalt, yet experiments prove the contrary: and it is certain that the ſaltneſs of this ſea is diminiſhed by the north, north-eaſt, and north-weſt winds; although we may with equal reaſon conclude, that it owes its ſaltneſs to the mines of ſalt which lie along its two banks, and which are either already known or will be known to poſterity. The depth of theſe waters alſo diminiſhes gradually as you approach the ſhores, and their ſaltneſs in the ſame way grows leſs in proportion to their proximity to the land, the north winds not unfrequently cauſing the rivers to diſcharge into it vaſt quantities of troubled water impregnated with clay. Theſe variations which the ſea is expoſed to are more or leſs conſiderable according to the nature of the winds; they affect the colour of the river waters to a certain diſtance from the ſhore, till theſe mixing with thoſe of the ſea, which then reſume the aſcendency, the fine green colour appears, which is natural to the ocean, and to all thoſe bodies of water that communicate with it.

It is well known, that beſides its ſalt taſte, all ſea water has a ſenſible bitterneſs, which muſt be attributed not only to the ſalt itſelf, but to the mixture of different ſubſtances that unite with it, particularly to different ſorts of alum, the ordinary effect of different combinations of acids. Beſides this, the waters of the Caſpian have another taſte, bitter too, but quite diſtinct, which affects the tongue with an impreſſion ſimilar to that made by the bile of animals; a property which is peculiar to this ſea, though not equally ſenſible at all ſeaſons. When the north and north-weſt winds have raged for a conſiderable time, this bitter taſte is ſenſibly felt; but when the wind has been ſouth, very imperfectly. We ſhall endeavour to account for this phenomenon. Caſpian ſea.

The Caſpian is ſurrounded on its weſtern ſide by the mountains of Caucaſus, which extend from Derbent to the Black ſea. Theſe mountains make a curve near Aſtrakan, and directing their courſe towards the eaſtern ſhore of the Caſpian, loſe themſelves near the mouth of the Jaïk, where they become ſecondary mountains, being diſpoſed in ſtrata. As Caucaſus is an inexhauſtible magazine of combuſtible ſubſtances, it conſequently lodges an aſtoniſhing quantity of metals in its bowels. Accordingly, along the foot of this immenſe chain of mountains, we ſometimes meet with warm ſprings, ſometimes ſprings of naphtha of different quality; ſometimes we find native ſulphur, mines of vitriol, or lakes heated by internal fires. Now the foot of Mount Caucaſus forming the immediate weſtern ſhore of the Caſpian ſea, it is very eaſy to imagine that a great quantity of the conſtituent parts of the former muſt be communicated to the latter: but it is chiefly to the naphtha, which abounds ſo much in the countries which ſurround this ſea, that we muſt attribute the true cauſe of the bitterneſs peculiar to its waters; for it is certain that this bitumen flows from the mountains, ſometimes in all its purity, and ſometimes mixed with other ſubſtances which it acquires in its paſſage through ſubterranean channels, from the moſt interior parts of theſe mountains to the ſea, where it falls to the bottom by its ſpecific gravity. It is certain too, that the north and north weſt winds detach the greateſt quantities of this naphtha; whence it is evident that the bitter taſte muſt be moſt ſenſible when theſe winds prevail. We may alſo comprehend why this taſte is not ſo ſtrong at the ſurface or in the neighbourhood of the ſhore, the waters there being leſs impregnated with ſalt, and the naphtha, which is united with the water by the ſalt, being then either carried to a diſtance by the winds, or precipitated to the bottom.

But it is not a bitter taſte alone that the naphtha communicates to the waters of the Caſpian: theſe waters were analyzed by M. Gmelin, and found to contain, beſides the common ſea ſalt, a conſiderable proportion of Glauber ſalt, intimately united with the former, and which is evidently a production of the naphtha.

As the waters of the Caſpian have no outlet, they are diſcharged by ſubterranean canals through the earth, where they depoſite beds of ſalt; the ſurface of which correſponds with that of the level of the ſea. The two great deſerts which extend from it to the eaſt and weſt are chiefly compoſed of a ſaline earth, in which the ſalt is formed by efflorеſcence into regular cryſtals; for which reaſon ſalt ſhowers and dews are exceedingly common in that neighbourhood. The ſalt of the marſhes at Aſtrakan, and that found in efflorеſcence in the deſerts, is by no means pure ſea ſalt,

Caſque || Caſſana.

but much debaſed by the bitter Glauber ſalt we mentioned above. In many places indeed it is found with cryſtals of a lozenge ſhape, which is peculiar to it, without any cubical appearance, the form peculiar to cryſtals of ſea ſalt.

A great deal has been written on the ſucceſſive augmentation and decreaſe of the Caſpian ſea, but with little truth. There is indeed to be perceived in it a certain riſe and fall of its waters; in which, however, no obſervation has ever diſcovered any regularity.

Many ſuppoſe (and there are ſtrong preſumptions in favour of the ſuppoſition), that the ſhores of the Caſpian were much more extenſive in ancient times than they are at preſent, and that it once communicated with the Black ſea. It is probable too, that the level of this laſt ſea was once much higher than it is at preſent. If then it be allowed, that the waters of the Black ſea, before it procured an exit by the ſtraits of Conſtantinople, roſe ſeveral fathoms above their preſent level, which from many concurring circumſtances may eaſily be admitted, it will follow, that all the plains of the Crimea, of the Kuman, of the Wolga, and of the Jaïk, and thoſe of Great Tartary beyond the lake of Aral, in ancient times formed but one ſea, which embraced the northern extremity of Caucaſus by a narrow ſtrait of little depth; the veſtiges of which are ſtill obvious in the river Mantyſch.

CASQUE, or Cask. See Cask.

CASSADA. See Jatropha, Botany *Index*.

CASSANA, Nicolo, called Nicoletto, an eminent Italian painter, was born at Venice in 1659, and became a diſciple of his father Giovanni Franceſco Caſſana, a Genoeſe, who had been taught the art of painting by Bernardino Strozzi. He ſoon diſtinguiſhed himſelf not only by the beauty of his colouring, but by the gracefulneſs of his figures in hiſtorical compoſitions, as well as in portrait. The moſt eminent perſonages ſolicited him to enrich their cabinets with ſome of his performances; and were more particularly deſirous to obtain their portraits, becauſe in that branch he excelled beyond competition. The grand duke of Tuſcany, who was an excellent judge of merit in all profeſſions, and as liberal an encourager of it, invited Nicoletto to his court; and he there painted the portraits of that prince and the princeſs Violante his conſort. Theſe performances procured him uncommon applauſe, as well as a noble gratuity, and he was employed and careſſed by the principal nobility of Florence. Beſide ſeveral hiſtorical ſubjects painted by this maſter while he reſided in that city, one was a very capital deſign: The ſubject of it was the *Conſpiracy of Catiline*; it conſiſted of nine figures as large as life, down to the knees; and the two principal figures were repreſented as with one hand joined in the preſence of their companions, and in their other hand holding a cup of blood. Some of the Engliſh nobility on their travels ſat to him for their portraits; which being ſent to London, and highly admired, Nicoletto was invited to England, with ſtrong aſſurances of a generous reception; and on his arrival he experienced the kindneſs, the reſpect, and the liberality, ſo peculiar to the natives of that kingdom. He had the honour of being introduced to the preſence of Queen Anne, and to paint her portrait; in which he ſucceeded ſo happily, that the queen diſtinguiſhed him by many marks of favour and honour; but he had not the happineſs to enjoy his good fortune for any length of time, dying in London, univerſally regretted, in the year 1713.

Caſſana || Caſſandra.

Cassana, *Giovanni Agoſtino*, called *L'Abate Caſſana*, was brother to the preceding, and born in 1664. He was educated along with him by their father Franceſco Caſſana, and he finiſhed his ſtudies at Venice, where his brother Nicolo reſided for ſome time. Although he compoſed and deſigned hiſtorical ſubjects with expertneſs, and with a correctneſs of outline equal to his brother; yet from prudence and fraternal affection, he declined to interfere with him, and choſe therefore to deſign and paint all ſorts of animals and fruits. In that ſtyle he arrived at a high degree of excellence, imitating nature with exactneſs, beauty, and truth: expreſſing the various plumage of his birds, and the hairs of the different animals, with ſuch tenderneſs and delicacy as rendered them eſtimable to all judges and lovers of the art. His works were admitted into the collections of thoſe of the firſt rank, and accounted ornaments of thoſe repoſitories of what is curious or valuable. He alſo painted fruits of thoſe kinds which were the moſt uncommon, or naturally of odd and ſingular colours; and ſuch fiſhes as ſeemed worthy to excite admiration by their unuſual form, colour, or appearance. But beſides thoſe ſubjects, he ſometimes painted the portraits of particular perſons of diſtinction, which he deſigned, coloured and touched, with the ſame degree of merit that was viſible in all his other performances. At laſt he determined to viſit Genoa, where his family had lived in eſteem; and took with him ſeveral pictures which he had already finiſhed. His intention was to diſplay his generoſity, and to appear as a perſon of more wealth and of greater conſequence than he really was; and to ſupport that character, he beſtowed his pictures on ſeveral of the principal nobility of that city. But, unhappily, he experienced no grateful return for all that prodigal munificence: he reduced himſelf by that vain liberality to the moſt neceſſitous circumſtances; was deprived of the means to procure for himſelf even the common neceſſaries of life; and waſted away the remainder of his days in the bitterneſs of poverty, miſery, and neglect.

CASSANDER, king of Macedon after Alexander the Great, was the ſon of Antipater. He made ſeveral conqueſts in Greece, aboliſhed democracy at Athens, and gave the government of that ſtate to the orator Demetrius. Olympias, the mother of Alexander, having cauſed Aridæus and his wife Eurydice, with others of Caſſander's party, to be put to death; he beſieged Pydne, whither the queen had retired, took it by a ſtratagem, and cauſed her to be put to death. He married Theſſalonica the ſiſter of Alexander the Great; and killed Roxana and Alexander, the wife and ſon of that conqueror. At length he entered into an alliance with Seleucus and Lyſimachus, againſt Antigonus and Demetrius; over whom he obtained a great victory near Ipſus in Phrygia, 301 years before the Chriſtian era, and died three years after, in the 19th year of his reign.

CASSANDRA, in fabulous hiſtory, the daughter of Priam and Hecuba, was beloved of Apollo, who promiſed to beſtow on her the ſpirit of prophecy, provided

Caffano || Caffine.

vided ſhe would conſent to his love. Caſſandra ſeemed to accept the propoſal; but had no ſooner obtained that gift, than ſhe laughed at the tempter, and broke her word. Apollo, being enraged, revenged himſelf, by cauſing no credit be given to her predictions, hence ſhe in vain propheſied the ruin of Troy. Ajax, the ſon of Oileus, having raviſhed her in the temple of Minerva, he was ſtruck with thunder. She fell into the hands of Agamemnon, who loved her to diſtraction; but in vain did ſhe predict that he would be aſſaſſinated in his own country. He was killed, with her, by the intrigues of Clytemneſtra; but their death was avenged by Oreſtes.

CASSANO, a town of Italy in the duchy of Milan, rendered remarkable by an obſtinate battle fought there between the Germans and French in 1705. It is ſubject to the houſe of Auſtria, and is ſeated on the river Adda, in E. Long. 10. 0. N. Lat. 45. 20.

Cassano, a town of Italy in Calabria citerior, in the kingdom of Naples, with a biſhop's ſee. E. Long. 16. 30. N. Lat. 39. 55.

CASSAVI, or Cassada. See Jatropha, Botany *Index*.

CASSEL, a town of French Flanders, and capital of a chatellany of the ſame name: It is ſeated on a mountain, where the terrace of the caſtle is ſtill to be ſeen; and from whence there is one of the fineſt proſpects in the world; for one may ſee no leſs than 32 towns, with a great extent of the ſea, from whence it is diſtant 15 miles. E. Long. 2. 27. N. Lat. 50. 48.

Cassel, the capital city of the landgravate of Heſſe-Caſſel, in the circle of the Upper Rhine in Germany; (ſee Hesse-Cassel). It is divided into the Old, New, and High Towns. The New Town is beſt built, the houſes being of ſtone, and the ſtreets broad. The houſes of the Old Town, which is within the walls, are moſtly of timber; but the ſtreets are broad, and the market places ſpacious. The place is ſtrongly fortified, but the fortifications are not regular. It contains about 32,000 inhabitants, of whom a great proportion are French Proteſtants. Theſe have eſtabliſhed ſeveral manufactories in the place, particularly in the woollen branch. It is ſeated on the declivity of a hill near the river Fulva, in E. Long. 9. 28. N. Lat. 51. 20.

CASSIA. See Botany *Index*.

Cassia Lignea. See Laurus.

CASSIDA. See Scutellaria, Botany *Index*.

Cassida, in *Zoology*, a genus of inſects belonging to the order of coleoptera. See Entomology *Index*.

CASSIMER, or Casimer, the name of a thin tweeled woollen cloth, much in faſhion for ſummer uſe.

CASSIMIRE, or Cashmire. See Cashmire.

CASSINE. See Botany *Index*. The Spaniards who live near the gold mines of Peru, are frequently obliged to drink an infuſion of this herb in order to moiſten their breaſts; without which they are liable to a ſort of ſuffocation, from the ſtrong metallic exhalations that are continually proceeding from the mines. In Paraguay, the Jeſuits make a great revenue by importing the leaves of this plant into many countries, under the name of Paraguay or South ſea tea, which is there drank in the ſame manner as that of China or Japan is with us. It is with difficulty preſerved in England. Caſſini.

CASSINI, Johannes Dominicus, a moſt excellent aſtronomer, was born at Piedmont in 1635. His early proficiency in aſtronomy procured him an invitation to be mathematical profeſſor at Bologna when he was no more than 15 years of age: and a comet appearing in 1652, he diſcovered that comets were not accidental meteors, but of the ſame nature. and probably governed by the ſame laws, as the planets. In the ſame year he ſolved a problem given up by Kepler and Bullialdus as inſolvable, which was, to determine geometrically the apogee and eccentricity of a planet from its true and mean place. In 1663, he was appointed inſpector general of the fortifications of the caſtle of Urbino, and had afterwards the care of all the rivers in the eccleſiaſtical ſtate: he ſtill however proſecuted his aſtronomical ſtudies, by diſcovering the revolution of Mars round his own axis; and, in 1666, publiſhed his theory of Jupiter's ſatellites. Caſſini was invited into France by Louis XIV. in 1669, where he ſettled as the firſt profeſſor in the royal obſervatory. In 1677 he demonſtrated the line of Jupiter's diurnal rotation; and in 1684 diſcovered four more ſatellites belonging to Saturn, Huygens having found one before. He inhabited the royal obſervatory at Paris more than forty years; and when he died in 1712, was ſucceeded by his only ſon James Caſſini.

Cassini, *James*, another celebrated aſtronomer, was the younger ſon of the former. He was born at Paris 18th February 1677. It would appear that his early ſtudies were conducted in his father's houſe, where, from the purſuits and ſtudies of his father, mathematics, and their application to aſtronomy, it is probable, were not neglected. He became a ſtudent afterwards at the Mazarine college, at the time that the celebrated Varignon was profeſſor of mathematics. With the aſſiſtance of this eminent man young Caſſini made ſuch progreſs, that at 15 years of age he ſupported a mathematical theſis with great honour. At the age of 17 he was admitted a member of the Academy of Sciences; and the ſame year he accompanied his father in a journey to Italy, where he aſſiſted him in the verification of the meridian at Bologna and other meaſurements. After his return he performed ſimilar operations in a journey into Holland, and he diſcovered ſome errors in the meaſure of the earth by Snell, the reſult of which was communicated to the Academy in 1702. In 1696 he made alſo a viſit to England, where he was made a member of the Royal Society. In 1712 he ſucceeded his father as aſtronomer royal at the obſervatory of Paris. In 1717 he gave to the Academy his reſearches on the diſtance of the fixed ſtars; in which he ſhewed that the whole annual orbit, of near 200 millions of miles diameter, is but as a point in compariſon of that diſtance. The ſame year he communicated alſo his diſcoveries concerning the inclination of the orbits of the ſatellites in general, and eſpecially of thoſe of Saturn's ſatellites and ring. In 1725 he undertook to determine the cauſe of the moon's libration, by which ſhe ſhews ſometimes a little towards one ſide, and ſometimes a little on the other, of that half which is commonly behind or hid from our view.

In 1732 an important queſtion in aſtronomy engaged

Caſſini. ged the ingenuity of our author. His father had determined, by his obſervations, that the planet Venus revolved about her axis in the ſpace of 23 hours; and M. Bianchini had publiſhed a work in 1729, in which he ſettled the period of the ſame revolution at 24 days 8 hours. From an examination of Bianchini's obſervations which were upon the ſpots in Venus, he diſcovered that he had intermitted his obſervations for the ſpace of three hours, from which cauſe he had probably miſtaken new ſpots for the old ones, and ſo had been led into the miſtake. He alſo determined the nature and quantity of the acceleration of the motion of Jupiter at half a ſecond per year, and of that of the retardation of Saturn at two minutes per year; that theſe quantities would go on increaſing for 2000 years, and then would decreaſe again. In 1740 he publiſhed his Aſtronomical Tables, and his Elements of Aſtronomy; very extenſive and accurate works.

Aſtronomy was the principal object of our author's conſideration, but he did not confine himſelf abſolutely to that purſuit, but made occaſional excurſions into other fields. We owe to him Experiments on Electricity, Experiments on the Recoil of Fire-arms; Reſearches on the Riſe of the Mercury in the Barometer at different Heights; Reflections on the perfecting of Burning-glaſſes; and ſome other memoirs.

One of the moſt important objects of the French academy was the meaſurement of the earth. In 1669 Picard meaſured a little more than a degree of latitude to the north of Paris; but as that extent appeared too ſmall from which to conclude the whole circumference with ſufficient accuracy, it was reſolved to continue that meaſurement on the meridian of Paris to the north and the ſouth, through the whole extent of the country, Accordingly, in 1683, the late M. de la Hire continued that on the north ſide of Paris, and the older Caſſini that on the ſouth ſide. The latter was aſſiſted in 1700 in the continution of this operation by his ſon our author. The ſame work was farther continued by the ſame academicians; and, finally, the part left unfiniſhed by De la Hire in the north was finiſhed in 1718 by our author, with the late Maraldi, and De la Hire the younger.

Theſe operations produced a conſiderable degree of preciſion. From this meaſured extent of ſix degrees, it appeared alſo, that the degrees were of different lengths in different parts of the meridian; and our author concluded, in the volume publiſhed for 1718, that they decreaſed more and more towards the pole, and that therefore the figure of the earth was that of an oblong ſpheroid, or having its axis longer than the equatorial diameter. He alſo meaſured the perpendicular to the ſame meridian, and compared the meaſured diſtance with the differences of longitude as before determined by the eclipſes of Jupiter's ſatellites: from which he concluded that the length of the degrees of longitude was ſmaller than it would be on a ſphere, and that therefore again the figure of the earth was an oblong ſpheroid, contrary to the determination of Newton by the theory of gravity. Newton was indeed of all men the moſt averſe from controverſy; but the other mathematicians in Britain did not tamely ſubmit to concluſions in direct oppoſition to the fundamental doctrine of this philoſopher. The conſequence was, that the French government ſent two different ſets of meaſurers, the one to meaſure a degree at the equator, the other at the polar circle; and the compariſon of the whole determined the figure to be an oblate ſpheroid, contrary to Caſſini's determination. Caſſini de Thury.

After a long and laborious life, James Caſſini died in April 1756, and was ſucceeded in the Academy and Obſervatory by his ſecond ſon. He publiſhed, A Treatiſe on the Magnitude and Figure of the Earth; as alſo, The Elements or Theory of the Planets, with Tables; beſide a great number of papers in the Memoirs of the Academy, from the year 1699 to 1755.

Cassini de Thury, Ceſar François, a celebrated French aſtronomer, director of the obſervatory, and member of moſt of the learned ſocieties of Europe, was born at Paris June 17. 1714. He was the ſecond ſon of James Caſſini, whoſe occupations and talents he inherited and ſupported with great honour. He received his firſt leſſons in aſtronomy and mathematics from MM. Maraldi and Camus; and made ſuch a rapid progreſs, that when he was not more than ten years of age he calculated the phaſes of a total eclipſe of the ſun. At the age of eighteen he accompanied his father in his two journeys undertaken for drawing the perpendicular to the obſervatory meridian from Straſbourg to Breſt. A general chart of France was from that time deviſed; for which purpoſe it was neceſſary to traverſe the country by ſeveral lines parallel and perpendicular to the meridian of Paris. Our author was charged with the conduct of this buſineſs; in which he was ſo ſcrupulous as to meaſure again what had been meaſured by his father. This great work was publiſhed in 1740, with a chart ſhewing the new meridian of Paris, by two different ſeries of triangles, paſſing along the ſea coaſts to Bayonne, traverſing the frontiers of Spain to the Mediterranean and Antibes, and thence along the eaſtern limits of France to Dunkirk, with parallel and perpendicular lines deſcribed at the diſtance of 6000 toiſes from one another, from ſide to ſide of the country.

Our author made a tour in 1741, in Flanders, in the train of the king. This gave riſe, at his majeſty's inſtance, to the chart of France; relative to which Caſſini publiſhed different works, as well as a great number of the ſheets of the chart itſelf. He undertook, in 1761, an expedition into Germany, for the purpoſe of continuing to Vienna the perpendicular of the Paris meridian; to unite the triangles of the chart of France with the points taken in Germany; to prepare the means of extending into that country the ſame plan as in France; and thus to eſtabliſh ſucceſſively for all Europe a moſt uſeful uniformity.—Our author was at Vienna the 6th of June 1761, the day of the tranſit of the planet Venus over the ſun, of which he obſerved as much as the ſtate of the weather would permit him to do, and publiſhed the account of it in his *Voyage en Allemagne*.

Caſſini, always meditating the perfection of his grand deſign, profited of the peace of 1783 to propoſe the joining of certain points taken upon the Engliſh coaſt with thoſe which had been determined on the coaſt of France, and thus to connect the general chart of the latter with that of the Britiſh iſles, as he had before united it with thoſe of Flanders and Germany. The propoſal was favourably received by the Engliſh government,

Caſſiodorus, Caſſiopeia.

government, and preſently carried into effect under the direction of the Royal Society, by the late General Roy.

Between the years 1735 and 1770, M. Caſſini publiſhed, in the volumes of Memoirs of the French Academy, a great number of pieces, conſiſting chiefly of aſtronomical obſervations and queſtions; among which are reſearches concerning the parallax of the ſun, the moon, Mars, and Venus; on aſtronomical refractions, and the effect cauſed in their quantity and laws by the weather; numerous obſervations on the obliquity of the ecliptic, and on the law of its variations. He cultivated aſtronomy for 50 years, the moſt important for that ſcience that ever elapſed for the magnitude and variety of objects; and in which he commonly ſuſtained a principal ſhare.

M. Caſſini was of a very ſtrong and vigorous conſtitution, which carried him through the many laborious operations in geography and aſtronomy which he conducted. An habitual retention of urine, however, rendered the laſt twelve years of his life very painful and diſtreſſing, till it was at length terminated by the ſmall-pox the 4th of September 1784, in the 71ſt year of his age. He was ſucceeded in the academy, and as director of the obſervatory, by his only ſon John-Dominic Caſſini, the fourth in order of direct deſcent who has filled that honourable ſtation. *Hutton's Math. Dict.*

CASSIODORUS, Marcus Aurelius, ſecretary of ſtate to Theodoric king of the Goths, was born at Squillace, in the kingdom of Naples, about the year 470. He was conſul in 514, and was in great credit under the reigns of Athalaric and Vitiges; but at 70 years of age retired into a monaſtery in Calabria, where he amuſed himſelf in making ſun dials, water-hour glaſſes, and perpetual lamps. He alſo formed a library; and compoſed ſeveral works, the beſt edition of which is that of Father Garet, printed at Rouen in 1679. Thoſe moſt eſteemed are his Divine Inſtitutions, and his Treatiſe on the Soul. He died about the year 562.

CASSIOPEIA, in fabulous hiſtory, wife to Cepheus king of Ethiopia, and mother of Andromeda. She thought herſelf more beautiful than the Nereides, who deſired Neptune to revenge the affront; ſo that he ſent a ſea monſter into the country, which did much harm. To appeaſe the god, her daughter Andromeda was expoſed to the monſter, but was reſcued by Perſeus; who obtained of Jupiter, that Caſſiopeia might be placed after her death among the ſtars: hence the conſtellation of that name.

Cassiopeia, in *Aſtronomy*, one of the conſtellations of the northern hemiſphere, ſituated next to Cepheus. In 1572, there appeared a new ſtar in this conſtellation, which at firſt ſurpaſſed in magnitude and brightneſs Jupiter himſelf; but it diminiſhed by degrees, and at laſt diſappeared, at the end of eighteen months. It alarmed all the aſtronomers of that age, many of whom wrote diſſertations on it; among the reſt Tycho Brahe, Kepler, Maurolycus, Lycetus, Gramineus, &c. Beza, the landgrave of Heſſe, Roſa, &c. wrote to prove it a comet, and the ſame which appeared to the Magi at the birth of Jeſus Chriſt, and that it came to declare his ſecond coming; they were anſwered on this ſubject by Tycho. The ſtars in the conſtellation Caſſiopeia, in Ptolemy's catalogue, are 13; in Hevelius's, 37; in Tycho's, 46; but in the Britannic catalogue Mr Flamſtead makes them 55.

Caſſis ‖ Caſſumar.

CASSIS, in antiquity, a plated or metalline helmet; different from the *galea*, which was of leather.

CASSITERIA, in the hiſtory of foſſils, a genus of cryſtals, the figures of which are influenced by an admixture of ſome particles of tin.

The caſſiteria are of two kinds; the whitiſh pellucid caſſiterion, and the brown caſſiterion. The firſt is a tolerably bright and pellucid cryſtal, and ſeldom ſubject to the common blemiſhes of cryſtal: it is of a perfect and regular form, in the figure of a quadrilateral pyramid: and is found in Devonſhire and Cornwall principally. The brown caſſiterion is like the former in figure: it is of a very ſmooth and gloſſy ſurface, and is alſo found in great plenty in Devonſhire and Cornwall.

CASSITERIDES, in *Ancient Geography*, a cluſter of iſlands to the weſt of the Land's End; oppoſite to Celtiberia, (Pliny); famous for their tin, which he calls *candidum plumbum*, formerly open to none but the Phœnicians; who alone carried on this commerce from Gades, concealing the navigation from the reſt of the world, (Strabo). The appellation is from *Caſſiteros*, the name for tin in Greek. Now thought to be the Scilly iſlands, or Sorlings, (Camden).

CASSIUS, Spurius, a renowned Roman general and conſul, whoſe enemies accuſing him of aſpiring to royalty, he was thrown down from the Tarpeian rock 485 years before Chriſt; after having thrice enjoyed the conſular dignity, been once general of the horſe under the firſt dictator that was created at Rome, and twice received the honour of a triumph.

Cassius, *Longinus*, a celebrated Roman lawyer, flouriſhed 113 years before Chriſt. He was ſo inflexible a judge, that his tribunal was called the *Rock of the impeached*. It is from the judicial ſeverity of this Caſſius, that very ſevere judges have been called *Caſſiani*.

Cassius, *Caius*, one of the murderers of Julius Cæſar: after his defeat by Mark Antony at the battle of Philippi, he ordered one of his freed men to put him to death with his own ſword, 41 years before Chriſt. See Rome.

CASSOCK, or Cassula, a kind of robe or gown, worn over the reſt of the habit, particularly by the clergy. The word caſſock comes from the French *caſſaque*, a horſeman's coat.

CASSONADE, in commerce, caſk-ſugar, or ſugar put into caſks or cheſts, after the firſt purification, but which has not been refined. It is ſold either in powder or in lumps; the whiteſt, and that of which the lumps are largeſt, is the beſt. Many imagine it to ſweeten more than loaf ſugar; but it is certain that it yields a great deal more ſcum.

CASSOWARY. See Struthio, Ornithology *Index*.

CASSUMAR, in the *Materia Medica*, a root reſembling that of zedoary.

It is cardiac and ſudorific, and famous in nervous caſes; it is alſo an ingredient in many compoſitions, and is preſcribed in powders, boluſes, and infuſions. Its doſe is from five to fifteen grains.

CASSUMBAZAR,

Caſſumbazar || Caſtagno.

CASSUMBAZAR, a town of India, in Aſia, ſituated on the river Ganges, in the province of Bengal. E. Long. 37. and N. Lat. 24.

CAST is peculiarly uſed to denote a figure or ſmall ſtatue of bronze. See BRONZE.

CAST, among founders, is applied to tubes of wax fitted in divers parts of a mould of the ſame matter; by means of which, when the wax of the mould is removed, the melted metal is conveyed into all the parts which the wax before poſſeſſed.

CAST, alſo denotes a cylindrical piece of braſs or copper, ſlit in two, lengthwiſe, uſed by the founders in ſand, to form a canal or conduit in their moulds, whereby the metal may be conveyed to the different pieces intended to be caſt.

CAST, among plumbers, denotes a little brazen funnel at one end of a mould, for caſting pipes without ſoldering, by means of which the melted metal is poured into the mould.

CAST, or *Caſte*, in ſpeaking of the eaſtern affairs, denotes a tribe, or number of families, of the ſame rank and profeſſion. The diviſion of a nation into caſts chiefly obtains in the dominions of the Great Mogul, kingdom of Bengal, iſland of Ceylon, and the great peninſula oppoſite thereto. In each of theſe there are, according to Father Martin, four principal caſts, viz. the caſt of the *bramins*, which is the firſt and moſt noble; the caſt of the *rajas*, or princes, who pretend to be deſcended from divers royal families; the caſt of the *choutres*, which comprehends all the artificers; and that of the *parias*, the loweſt and moſt contemptible of all: though Henry Lord, it muſt be obſerved, divides the Indians about Surat into four *caſts*, ſomewhat differently from Martin, viz. into *bramins*, or prieſts; *cuttery*, or ſoldiers; *ſhuddery*, which we call *banians*, or merchants; and *wyſe*, the mechanics or artificers. Every art and trade is confined to its proper *caſt*, nor is allowed to be exerciſed by any but thoſe whoſe fathers profeſſed the ſame. So that a tailor's ſon can never riſe to be a painter, nor a painter's ſon fall to be a tailor; though there are ſome employments that are proper to all the caſts, e. g. every body may be a ſoldier or a merchant. There are alſo divers caſts which are allowed to till the ground, but not all. The caſt of *parias* is held infamous, inſomuch that it is a diſgrace to have any dealings or converſation with them; and there are ſome trades in the caſt of *choutres*, which debaſe their profeſſors almoſt to the ſame rank. Thus ſhoemakers, and all artificers in leather, as alſo fiſhermen, and even ſhepherds, are reputed no better than *parias*.

CASTAGNO, ANDREA DAL, hiſtorical painter, was born at a ſmall village called *Caſtagno*, belonging to the territory of Tuſcany, in 1409: and being deprived of his parents, was employed by his uncle to attend the herds of cattle in the fields; but, having accidentally ſeen an ordinary painter at work in the country, he obſerved him for ſome time with ſurpriſe and attention, and afterwards made ſuch efforts to imitate him, as aſtoniſhed all who ſaw his productions. The extraordinary genius of Andrea became at laſt a common topic of diſcourſe in Florence; and ſo far excited the curioſity of Bernardetto de Medici, that he ſent for Andrea: and perceiving that he had promiſing talents, he placed him under the care of the beſt maſters who were at that time in Florence. Andrea diligently purſued his ſtudies, devoted himſelf entirely to practice under the direction of his inſtructors, became particularly eminent in deſign, and in a few years made ſo great a progreſs, that he found as much employment as he could poſſibly execute. He painted only in diſtemper, and freſco, with a manner of colouring that was not very agreeable, being rather dry and hard, till he learned the ſecret of painting in oil from Domenico Venetiano, who had derived his knowledge of that new diſcovery from Antonello da Meſſina. Andrea was the firſt of the Florentine artiſts who painted in oil; but although he was in the higheſt degree indebted to Domenico for diſcloſing the ſecret, yet he ſecretly envied the merit of the man who taught him the art; and becauſe his own works ſeemed be much leſs admired than thoſe of Domenico, he determined to aſſaſſinate his friend and benefactor. He executed his deſign with the utmoſt ingratitude and treachery (for Domenico at that time lived with him, and painted in partnerſhip with him), and he ſtabbed him at a corner of a ſtreet ſo ſecretly, that he eſcaped, unobſerved and unſuſpected, to his own houſe, where he compoſedly ſat down to work; and thither Domenico was ſoon after conveyed, to die in the arms of his murderer. The real author of ſo inhuman a tranſaction was never diſcovered, till Andrea, through remorſe of conſcience, diſcloſed it on his deathbed, in 1480. He finiſhed ſeveral conſiderable works at Florence, by which he gained great riches, and as great a reputation; but when his villanous miſconduct became public, his memory was ever after held in the utmoſt deteſtation. The moſt noted work of this maſter is in the hall of juſtice at Florence, repreſenting the execution of the conſpirators againſt the houſe of Medicis.

Caſtagno || Caſtalio.

CASTALIAN SPRING. See CASTALIUS.

CASTALIO, SEBASTIAN, was born at Chatillon, on the Rhone, in the year 1515. Calvin conceived ſuch an eſteem and friendſhip for him, during the ſtay he made at Straſburg in 1540 and 1541, that he lodged him ſome days at his houſe, and procured him a regent's place in the college of Geneva. Caſtalio, after continuing in this office near three years, was forced to quit it in the year 1544, on account of ſome particular opinions which he held concerning Solomon's Song, and Chriſt's deſcent into hell. He retired to Baſil, where he was made Greek profeſſor, and died in that place in 1564, aged 48. He incurred the high diſpleaſure of Calvin and Theodore Beza, for differing with them concerning predeſtination and the puniſhment of heretics. His works are very conſiderable both on account of their quality and number. In 1545, he printed at Baſil four books of dialogues, containing the principal hiſtories of the Bible in elegant Latin: ſo that youth might thereby make a proficiency in piety and in the Latin tongue at the ſame time. But his principal work is a Latin and French tranſlation of the Scripture. He began the Latin tranſlation at Geneva in 1542, and finiſhed it at Baſil in 1550. It was printed at Baſil in 1551, and dedicated by the author to Edward VI. king of England. The French verſion was dedicated to Henry II. of France,

Caſtalius || Caſtel.

France, and printed at Baſil in 1555. The fault which has been moſt generally condemned in his Latin tranſlation, is the affectation of uſing only claſſical terms.

CASTALIUS FONS (Strabo, Pauſanias); *Caſtalia*, (Pindar, Virgil); A fountain at the foot of Mount Parnaſſus, in Phocis, near the temple of Apollo, or near Delphi; ſacred to the Muſes, thence called *Caſtalides*. Its murmurs were thought prophetic, (Nonnius, Lucian.) See the articles DELPHI and PARNASSUS.

CASTANEA. See FAGUS. BOTANY *Index*.

CASTANETS, CASTAGNETTES, or CASTANETTAS, a kind of muſical inſtrument, wherewith the Moors, Spaniards, and Bohemians, accompany their dances, ſarabands, and guitars. It conſiſts of two little round pieces of wood dried, and hollowed in manner of a ſpoon, the concavities whereof are placed on one another, faſtened to the thumb, and beat from time to time with the middle finger, to direct their motion and cadences. The *caſtanets* may be beat eight or nine times in the ſpace of one meaſure, or ſecond of a minute.

CASTANOVITZ, a town of Croatia, ſituated on the river Unna, which divides Chriſtendom from Turkey. E. Long. 17. 20. N. Lat. 45. 40. It is ſubject to the houſe of Auſtria.

CASTEL, LEWIS BERTRAND, a learned Jeſuit, was born at Montpelier in 1688, and entered among the Jeſuits in 1703. He ſtudied polite literature in his youth; and at length applied himſelf entirely to the ſtudy of mathematics and natural philoſophy. He diſtinguiſhed himſelf by writing on gravity; the mathematics; and on the muſic of colours, a very whimſical idea, which he took great pains to reduce to practice. His piece on gravity, entitled *Traité de la Penſateur uuiverſelle*, was printed at Paris, in 1724. He afterwards publiſhed his *Mathematique univerſelle*; which occaſioned his being unanimouſly choſen a fellow of the Royal Society of London, without the leaſt ſolicitation. He was alſo a member of the academies of Bourdeaux and Rouen: but his *Claveçin vculaire* made the moſt noiſe; and he ſpent much time and expence in making an harpſichord for the eye, but without ſucceſs. He alſo wrote for and againſt Sir Iſaac Newton, and publiſhed ſeveral other works; the principal of which are, *Le Plan du Mathematique abregée*, and a treatiſe entitled *Optique des Couleurs*. He led a very exemplary life, and died in 1757.

CASTELAMARA, a town of Italy, in the kingdom of Naples, and the Hither Principato, with a biſhop's ſee and a good harbour. E. Long. 14. 15. N. Lat. 41. 40.

CASTEL-ARAGONESE, a ſtrong town of Italy, in the iſland of Sardinia, with a biſhop's ſee, and a good harbour. It is ſeated on the N. W. coaſt of the iſland, in E. Long. 8. 57. N. Lat. 40. 56.

CASTEL-Branco, a town of Portugal, and capital of the province of Beira; ſeated on the river Lyra, 35 miles N. W. of Alcantara. W. Long. 8. 0. N. Lat. 39. 35.

CASTEL-Franco, a very ſmall, but well fortified frontier town of the Bologneſe, in Italy, belonging to the Pope.

CASTEL-de-Vide, a ſmall ſtrong town of Alentejo. It was taken by Philip V. W. Long. 6. 25. N. Lat. 39. 15.

Caſtel || Caſtellarius

CASTEL-Folit, a town of Spain, in Catalonia, ſeaten on an inacceſſible eminence, between Gironne and Campredon, about 15 miles from each, and near the river Fulva.

CASTEL-Gandolpho, a town of Italy, in the territory of the church, with a caſtle, to which the pope retires in the ſummer ſeaſon; 10 miles S. by E. of Rome. E. Long. 12. 46. N. Lat. 41. 44.

CASTEL-Novo, a ſtrong town of Dalmatia, ſubject to the Venetians; ſeated on the gulf of Cataio, in E. Long. 18. 45. N. Lat. 42. 25.

CASTEL-Rodrigo, a town of Portugal, in the province of Tra-los-Montes, in W. Long. 7. 1. N. Lat. 41. 0.

CASTEL-Novo-de-Carfagnana, a town of Italy, in the Modeneſe, with a ſtrong fortreſs. It is the capital of the valley of Carfagnana, and ſeated on the river Serchio, 17 miles above Lucca.

CASTEL-del-Ovo, a ſmall iſland in the Tuſcan ſea, in the gulf of Naples, near a town of that name, to which it is joined by a ſtone bridge. The fortreſs is called Caſtel del Ovo, in which there is always a good garriſon.

CASTELBAR, a town of Ireland, in the county of Mayo, and province of Connaught, 35 miles N. of Galway. W. Long. 9. 25. N. Lat. 53. 45.

CASTELL, EDMUND, D. D. a learned Engliſh divine of the 17th century, diſtinguiſhed by his ſkill in the eaſtern languages. He was educated at Cambridge; where he was maſter of Catharine hall, and Arabic profeſſor; and was at length canon of Canterbury. He had the greateſt ſhare in the Polyglott Bible of London; and wrote the *Heptaglotton pro ſeptem Orientalibus*, &c. On this excellent work, which occupied a great part of his life, he beſtowed incredible pains and expence, even to the breaking of his conſtitution, and exhauſting of his fortune, having expended no leſs than 12,000l. upon that work. At length, when it was printed, the copies remained unſold upon his hands. He died in 1685; and lies buried in the churchyard of Higham Gobyon in Bedfordſhire, of which he was rector. It appears from the inſcription on his monument, which he erected in his lifetime, that he was chaplain to Charles II. He bequeathed all his oriental manuſcripts to the univerſity of Cambridge, on condition that his name ſhould be written on every copy in the collection.

CASTELLA, a town of the Mantuan, in Italy, about five miles north-eaſt of the city of Mantua. E. Long. 11. 15. N. Lat. 45. 30.

CASTELLAN, the name of a dignity or charge in Poland: The caſtellans are ſenators of the kingdom, but ſenators only of the lower claſs, who, in diets, ſit on low ſeats, behind the palatines, or great ſenators. They are a kind of lieutenants of provinces, and command a part of the palatinate under the palatine.

CASTELLANY, the territory belonging to any city or town, chiefly uſed in France, and Flanders: Thus we ſay, the caſtellany of Liſle, Ypres, &c.

CASTELLARIUS, the keeper, or curator, of a caſtellum. Gruter gives an ancient ſepulchral inſcription in memory of a *caſtellarius*.

Caſtellatio || Caſtiglione.

CASTELLATIO, in middle-age writers, the act of building a caſtle, or of fortifying a houſe, and rendering it a caſtle.—By the ancient Engliſh laws, caſtellation was prohibited without the king's ſpecial licenſe.

CASTELLI, Bernard, an Italian painter, was born at Genoa in 1557; and excelled in colouring and in portraits. He was the intimate friend of Taſſo, and took upon himſelf the taſk of deſigning and etching the figures of his Jeruſalem Delivered. He died at Genoa in 1629.

Valerio Caſtelli, one of his ſons, was born at Genoa in 1625, and ſurpaſſed his father. He particularly excelled in painting battles; which he compoſed with ſpirit, and executed them with ſo pleaſing a variety, and ſo great freedom of hand, as gained him univerſal applauſe. His horſes are admirably drawn, thrown into attitudes that are natural and becoming, full of motion, action, and life. In that ſtyle of painting he ſhowed all the fire of Tintoretto, united with the fine taſte of compoſition of Paolo Veroneſe. He died in 1659. The works of this maſter are not very frequent; but they are deſervedly held in very high eſteem. It is believed that a greater number of his eaſel pictures are in the collections of the nobility and gentry of England, than in any other part of Europe.

CASTELLORUM operatio, caſtle work, or ſervice and labour done by inferior tenants for the building and upholding of caſtles of defence; towards which ſome gave perſonal aſſiſtance, and others paid their contributions. This was one of the three neceſſary charges to which all lands among the Anglo-Saxons were expreſsly ſubject.

CASTELVETRO, Lewis, a native of Modena, of the 16th century, famous for his *Comment on Ariſtotle's Poetics*. He was proſecuted by the inquiſition for a certain book of Melancthon, which he had tranſlated into Italian. He retired to Baſil, where he died.

CASTIGATION, among the Romans, the puniſhment of an offender by blows, or beating with a wand or ſwitch. Caſtigation was chiefly a military puniſhment; the power of inflicting of which on the ſoldiery was given to the tribunes. Some make it of two kinds; one with a ſtick or cane, called *fuſtigatio;* the other with rods, called *flagellatio:* the latter was the moſt diſhonourable.

CASTIGATORY *for* Scolds. A woman indicted for being a common ſcold, if convicted, ſhall be placed in a certain engine of correction, called the *trebucket caſtigatory*, or *cucking ſtool;* which, in the Saxon language, ſignifies the *ſcolding ſtool;* though now it is frequently corrupted into the *ducking ſtool;* becauſe the reſidue of the judgment is, that when ſhe is placed therein, ſhe ſhall be plunged in water for her puniſhment.

CASTIGLIONE, Giovanni Benedetto, a celebrated painter, was born at Genoa in 1616. His firſt maſter was Gio-Battiſta Paggi. Afterwards he ſtudied under Andrea Ferrari; and laſtly perfected himſelf from the inſtructions of Anthony Vandyck, who at that time reſided at Genoa. He painted portraits, hiſtorical pieces, landſcapes, and caſtles; in the latter of which he is ſaid chiefly to have excelled; as alſo in fairs, markets, and all kinds of rural ſcenes. By this maſter we have alſo a great number of etchings, which are all ſpirited, free, and full of taſte. The effect is, in general, powerful and pleaſing; and many of them have a more harmonized and finiſhed appearance than is uſual from the point, ſo little aſſiſted by the graver. His drawing of the naked figure, though by no means correct, is notwithſtanding managed in a ſtyle that indicates the hand of the maſter.

Caſtiglione || Caſtile.

His ſon, *Franceſco*, was bred under himſelf, and excelled in the ſame ſubjects; and it is thought that many good paintings which are aſcribed to Benedetto, and are frequently ſeen at ſales, or in modern collections, are copies after him by his ſon Franceſco, or perhaps originals of the younger Caſtiglione.

Castiglione, a ſmall but ſtrong town of Italy, in Mantua, with a caſtle. It was taken by the Germans in 1701, and the French defeated the Imperialiſts near it in 1706. E. Long. 10. 29. N. Lat. 43. 23.

CASTIGLIONI, Balthazar, an eminent Italian nobleman, deſcended from an illuſtrious and ancient family, and born at his own villa at Caſalico in the duchy of Milan in 1478. He ſtudied painting, ſculpture, and architecture, as appears from a book he wrote in favour of theſe arts; and excelled ſo much in them, that Raphael Urbino, and Buonaroti, though incomparable artiſts, never thought their works complete without the approbation of Count Caſtiglioni. When he was 26 years of age, Guido Ubaldo, duke of Urbino, ſent him ambaſſador to Pope Julius II. He was ſent upon a ſecond embaſſy to Louis XII. of France, and upon a third to Henry VII. of England. After he had deſpatched his buſineſs here, he returned, and began his celebrated work, entitled *the Courtier;* which he completed at Rome in 1516. This work is full of moral and political inſtruction: and if we ſeek for the Italian tongue in perfection, it is ſaid to be nowhere better found than in this performance. A verſion of this work, together with the original Italian, was publiſhed at London in 1727, by A. P. Caſtiglioni, a gentlemen of the ſame family, who reſided there under the patronage of Dr Gibſon biſhop of London. Count Caſtiglioni was ſent by Clement VII. to the court of the emperor Charles V. in quality of legate, and died at Toledo in 1529.

CASTILE, New, or The Kingdom of Toledo, a province of Spain, bounded on the north by Old Caſtile, on the eaſt by the kingdoms of Arragon and Valencia, on the ſouth by thoſe of Murcia and Andaluſia, and on the weſt by the kingdom of Leon. It is divided into three parts; Argaria to the north, Mancha to the eaſt, and Sierra to the ſouth. Madrid is the capital. Both theſe provinces are very well watered with rivers, and the air is generally pure and healthy; but the land is mountainous, dry, and uncultivated, through the lazineſs of the inhabitants. The north part produces fruits and wine, and the ſouth good paſtures and fine wool. Theſe provinces are divided by a long chain of mountains, which run from eaſt to weſt.

Castile, Old, a province of Spain, with the title of a kingdom. It is about 192 miles in length, and 115 in breadth; bounded on the ſouth by New Caſtile, on the eaſt by Arragon and Navarre, on the north by Biſcay

Caſtile || Caſting.

Biſcay and Aſturias, and on the weſt by the kingdom of Leon. Burgos is the capital town.

Castile-de-Oro, a large and fertile country in South America, lying to the weſt of the Oroonoko. It comprehends eight governments; viz. Terra Firma, Proper Carthagena, St Martha, Rio de la Hacha, Venezuela, New Andaluſia, Popayan, and the kingdom of New Granada.

CASTILLAN, or Castillane, a gold coin current in Spain, and worth fourteen rials and ſixteen deniers.

Castillan, is alſo a weight uſed in Spain for weighing gold. It is a hundredth part of a pound Spaniſh weight. What they commonly call a weight of gold in Spain is always underſtood of the caſtillan.

CASTILLARA, a town of the Mantuan in Italy, ſituated ſix miles north-eaſt of the city of Mantua. E. Long. 11. 25. N. Lat. 45. 20.

CASTILLON, a town of France, in the department of Gironde, ſituated on the river Dordogne, 16 miles eaſt of Bourdeaux. W. Long. 2. 40. N. Lat. 44. 50.

CASTING, in foundry, the running of metal into a mould, prepared for that purpoſe.

Casting of Metals, of Letters, Bells, &c. See the article Foundry.

Casting in Sand or Earth, is the running of metals between two frames, or moulds, filled with ſand or earth, wherein the figure that the metal is to take has been impreſſed *en creux*, by means of the pattern.

Casting, among ſculptors, implies the taking of caſts and impreſſions of figures, buſts, medals, leaves, &c.

The method of taking of caſts of figures and buſts is moſt generally by the uſe of plaſter of Paris, i. e. alabaſter calcined by a gentle heat. The advantage of uſing this ſubſtance preferably to others is, that notwithſtanding a ſlight calcination reduces it to a pulverine ſtate, it becomes again a tenacious and cohering body, by being moiſtened with water, and afterwards ſuffered to dry; by which means either a concave or a convex figure may be given by a proper mould or model to it when wet, and retained by the hardneſs it acquires when dry: and from theſe qualities, it is fitted for the double purpoſe of making both caſts, and moulds for forming thoſe caſts. The particular manner of making caſts depends on the form of the ſubject to be taken. Where there are no projecting parts, it is very ſimple and eaſy; as likewiſe where there are ſuch as form only a right or any greater angle with the principal ſurface of the body: but where parts project in leſſer angles, or form a curve inclined towards the principal ſurface of the body, the work is more difficult.

The firſt ſtep to be taken is the forming the mould. In order to this, if the original or model be a baſs relief, or any other piece of a flat form, having its ſurface firſt well greaſed, it muſt be placed on a proper table, and ſurrounded by a frame, the ſides of which muſt be at ſuch a diſtance from it as will allow a proper thickneſs for the ſides of the mould. As much plaſter as will be ſufficient to cover and riſe to ſuch a thickneſs as may give ſufficient ſtrength to the mould, as alſo to fill the hollow betwixt the frame and the model, muſt be moiſtened with water, till it be juſt of ſuch conſiſtence as will allow it to be poured upon the model. This muſt be done as ſoon as poſſible; or the plaſter would concrete or ſet, ſo as to become more troubleſome in the working, or unfit to be uſed. The whole muſt then be ſuffered to remain in this condition, till the plaſter has attained its hardneſs; and then the frame being taken away, the preparatory caſt or mould thus formed may be taken off from the ſubject entire. Caſting.

Where the model or original ſubject is of a round or erect form, a different method muſt be purſued; and the mould muſt be divided into ſeveral pieces: or if the ſubject conſiſts of detached and projecting parts, it is frequently moſt expedient to caſt ſuch parts ſeparately, and afterwards join them together.

Where the original ſubject or mould forms a round, or ſpheroid, or any part of ſuch round or ſpheroid, more than one half the plaſter muſt be uſed without any frame to keep it round the model; and muſt be tempered with water to ſuch a conſiſtence, that it may be wrought with the hand like very ſoft paſte; but though it muſt not be ſo fluid as when prepared for flat-figured models, it muſt yet be as moiſt as is compatible with its cohering ſufficiently to hold together; and being thus prepared, it muſt be put upon the model, and compreſſed with the hand, or any flat inſtrument, that the parts of it may adapt themſelves, in the moſt perfect manner, to thoſe of the ſubject, as well as to be compact with reſpect to themſelves. When the model is ſo covered to a convenient thickneſs, the whole muſt be left at reſt till the plaſter be ſet and firm, ſo as to bear dividing without falling to pieces, or being liable to be put out of its form by ſlight violence; and it muſt then be divided into pieces, in order to its being taken off from the model, by cutting it with a knife with a very thin blade: and being divided, muſt be cautiouſly taken off, and kept till dry; but it muſt be always carefully obſerved, before the ſeparation of the parts be made, to notch them acroſs the joints or lines of the diviſion, at proper diſtances, that they may with eaſe and certainty be properly conjoined again; which would be much more precarious and troubleſome without ſuch directive marks. The art of properly dividing the moulds, in order to make them ſeparate from the model, requires more dexterity and ſkill than any other thing in the art of caſting; and does not admit of rules for the moſt advantageous conduct of it in every caſe. Where the ſubject is of a round or ſpheroidal form, it is beſt to divide the mould into three parts, which will then eaſily come off from the model: and the ſame will hold good of a cylinder or any regular curved figure.

The mould being thus formed, and dry, and the parts put together, it muſt be firſt greaſed, and placed in ſuch a poſition that the hollow may lie upwards, and then filled with plaſter mixed with water, in the ſame proportion and manner as was directed for the caſting the mould: and when the caſt is perfectly ſet and dry, it muſt be taken out of the mould, and repaired where it is neceſſary; which finiſhes the operation.

This is all that is required with reſpect to ſubjects where the ſurfaces have the regularity above-mentioned: but where they form curves which interſect each other, the conduct of the operation muſt be varied with reſpect to the manner of taking the caſt of

Caſting. the mould from off the ſubject or model; and where there are long projecting parts, ſuch as legs or arms, they ſhould be wrought in ſeparate caſts. The operator may eaſily judge, from the original ſubjects, what parts will come off together, and what require to be ſeparated: the principle of the whole conſiſts only in this, that where under-workings, as they are called, occur, that is, wherever a ſtraight line drawn from the baſis or inſertion of any projection, would be cut or croſſed by any part of ſuch projection, ſuch part cannot be taken off without a diviſion; which muſt be made either in the place where the projection would croſs the ſtraight line; or, as that is frequently difficult, the whole projection muſt be ſeparated from the main body, and divided alſo lengthwiſe into two parts; and where there are no projections from the principal ſurfaces, but the body is ſo formed as to render the ſurface a compoſition of ſuch curves, that a ſtraight line being drawn parallel to the ſurface of one part would be cut by the outline, in one or more places, of another part, a diviſion of the whole ſhould be made, ſo as to reduce the parts of it into regular curves, which muſt then be treated as ſuch.

In larger maſſes, where there would otherwiſe be a great thickneſs of the plaſter, a core or body may be put within the mould, in order to produce a hollow in the caſt; which both ſaves the expence of the plaſter, and renders the caſt lighter.

This core may be of wood, where the forming a hollow of a ſtraight figure, or a conical one with the baſis outward, will anſwer the end: but if the cavity require to be round, or of any curve figure, the core cannot be then drawn while entire; and conſequently ſhould be of ſuch matter as may be taken out piecemeal. In this caſe, the core is beſt formed of clay; which muſt be worked upon wires to give it a tenacity, and ſuſpended in the hollow of the mould by croſs wires lying over the mouth; and when the plaſter is ſufficiently ſet to bear handling, the clay muſt be picked out by a proper inſtrument.

Where it is deſired to render the plaſter harder, the water with which it is tempered ſhould be mixed with parchment ſize properly prepared, which will make it very firm and tenacious.

In the ſame manner, figures, buſts, &c. may be caſt of lead, or any other metal, in the moulds of plaſter; only the expence of plaſter, and the tedioufneſs of its becoming ſufficiently dry, when in a very large maſs, to bear the heat of melted metal, render the uſe of clay, compounded with ſome other proper materials, preferable where large ſubjects are in queſtion. The clay, in this caſe, ſhould be waſhed over till it be perfectly free from gravel or ſtones; and then mixed with a third or more of fine ſand to prevent it cracking; or, inſtead of ſand, coal aſhes ſifted fine may be uſed. Whether plaſter or clay be employed for the caſting in metal, it is extremely neceſſary to have the mould perfectly dry: otherwiſe the moiſture, being rarefied, will make an exploſion that will blow the metal out of the mould, and endanger the operator, or at leaſt crack the mould in ſuch a manner as to fruſtrate the operation. Where the parts of a mould are larger, or project much, and conſequently require a greater tenacity of the matter they are formed of to keep them together, flocks of cloth, prepared like thoſe deſigned for paper hagings, or fine cotton plucked or cut till it is very ſhort, ſhould be mixed with the aſhes or ſand before they are added to the clay to make the compoſition for the mould. The proportion ſhould be according to the degree of coheſion required; but a ſmall quantity will anſwer the end, if the other ingredient of the compoſition be good, and the parts of the mould properly linked together by means of the wires above directed. Caſting.

There is a nethod of taking caſts in metals from ſmall animals, and the parts of vegetables, which may be practiſed for ſome purpoſes with advantage: particularly for the decorating grottoes or rock work, where nature is imitated. The proper kinds of animals are lizards, ſnakes, frogs, birds, or inſects; the caſts of which, if properly coloured, will be exact repreſentations of the originals.

This is to be performed by the following method. A coffin or proper cheſt for forming the mould being prepared of clay, or four pieces of boards fixed together, the animal or parts of vegetables muſt be ſuſpended in it by a ſtring; and the leaves, tendrils or other detached parts of the vegetables, or the legs, wings, &c. of the animals, properly ſeparated and adjuſted, in their right poſition by a ſmall pair of pincers: a due quantity of plaſter of Paris and calcined talk, in equal quantities, with ſome alumen plumoſum, muſt then be tempered with water to the proper conſiſtence for caſting; and the ſubject from whence the caſt is to be taken, alſo the ſides of the coffin, moiſtened with ſpirit of wine. The coffin or cheſt muſt then be filled with the tempered compoſition of the plaſter and talk, putting at the ſame time a piece of ſtraight ſtick or wood to the principal part of the body of the ſubject, and pieces of thick wire to the extremities of the other parts, in order that they may form, when drawn out after the matter of the mould is properly ſet and firm, a channel for pouring in the melted metal, and vents for the air; which otherwiſe by the rarefaction it would undergo from the heat of the metal would blow it out or burſt the mould. In a ſhort time the plaſter and talk will ſet and become hard, when the ſtick and wires may be drawn out, and the frame or coffin in which the mould was caſt taken away: and the mould muſt then be put firſt into a moderate heat, and afterwards, when it is as dry as it can be rendered by that degree, removed into a greater; which may be gradually increaſed till the whole be red hot. The animal or part of any vegetable, which was included in the mould, will then be burnt to a coal; and may be totally calcined to aſhes, by blowing for ſome time gently into the channel and paſſages made for pouring in the metal, and giving vent to the air, which will, at the ſame time that it deſtroys the remainder of the animal or vegetable matter, blow out the aſhes. The mould muſt then be ſuffered to cool gently; and will be perfect; the deſtruction of the ſubſtance of the animal or vegetable having produced a hollow of a figure correſpondent to it: but it may be nevertheleſs proper to ſhake the mould, and turn it upſide down, as alſo to blow with the bellows into each of the air-vents, in order to free it wholly from any remainder of the aſhes; or where there may be an opportunity of filling the hollow with quickſilver without expence, it will be found a very effectual method of clearing the cavity, as all duſt, aſhes, or ſmall detached bodies, will neceſſarily

Caſting. neceſſarily riſe to the ſurface of the quickſilver, and be poured out with it. The mould being thus prepared, it muſt be heated very hot when uſed, if the caſt be made with copper or braſs: but a leſs degree will ſerve for lead or tin; and the matter being poured in, the mould muſt be gently ſtruck; and then ſuffered to reſt till it be cold; at which time it muſt be carefully taken from the caſt, but without the leaſt force; for ſuch parts of the matter as appear to adhere more ſtrongly, muſt be ſoftened by ſoaking in water till they be entirely looſened, that none of the more delicate parts of the caſt may be broken off or bent.

Where the alumen plumoſum, or talk, cannot eaſily be procured, the plaſter may be uſed alone; but it is apt to be calcined by the heat uſed in burning the animal or vegetable from whence the caſt is taken, and to become of too incohering and crumbly texture; or, for cheapneſs, Sturbridge or any other good clay, waſhed over, till it be perfectly fine, and mixed with an equal part of ſand, and ſome flocks cut ſmall, may be employed. Pounded pumice ſtone and plaſter of Paris, taken in equal quantities, and mixed with waſhed clay in the ſame proportion, is ſaid to make excellent moulds for this and parallel uſes.

Caſts of medals, or ſuch ſmall pieces as are of a ſimilar form, may be made in plaſter by the method directed for baſs relievos.

Indeed there is nothing more required than to form a mould by laying them on a proper board, and having ſurrounded them by a rim made by the piece of a card or any other paſteboard, to fill the rim with ſoft tempered plaſter of Paris; which mould, when dry, will ſerve for ſeveral caſts. It is nevertheleſs a better method to form the mould of melted ſulphur; which will produce a ſharper impreſſion in the caſt, and be more durable than thoſe made of plaſter.

The caſts are likewiſe frequently made of ſulphur, which being melted muſt be treated exactly in the ſame manner as the plaſter

Phil. Comm. of Arts. For taking caſts from medals, Dr Lewis recommends a mixture of flowers of brimſtone and red lead: equal parts of theſe are to be put over the fire in a ladle, till they ſoften to the conſiſtence of pap: then they are kindled with a piece of paper, and ſtirred for ſome time. The veſſel being afterwards covered cloſe, and continued on the fire, the mixture grows fluid in a few minutes. It is then to be poured on the metal, previouſly oiled and wiped clean. The caſts are very neat; their colour ſometimes a pretty deep black, ſometimes a dark gray: they are very durable; and when ſoiled, may be waſhed clean in ſpirits of wine.

Naturaliſts Companion. Dr Lettſom recommends tin foil for taking off caſts from medals. The thinneſt kind is to be uſed. It ſhould be laid over the ſubject from which the impreſſion is to be taken, and then rubbed with a bruſh, the point of a ſkewer, or a pin, till it has perfectly received the impreſſion. The tin foil ſhould now be pared cloſe to the edge of the medal, till it is brought to the ſame circumference: the medal muſt then be reverſed, and the tin foil will drop off into a chip box or mould placed ready to receive it. Thus the concave ſide of the foil will be uppermoſt, and upon this plaſter of Paris, prepared in the uſual manner, may be poured. When dry, the whole is to be taken out, and the tin foil ſticking on the plaſter will give a perfect repreſentation of the medal, almoſt equal in beauty to ſilver. If the box or mould is a little larger than the medal, the plaſter running round the tin foil will give the appearance of a white frame or circular border; whence the new made medal will appear more neat and beautiful. Caſting.

Caſts may be made likewiſe with iron, prepared in the following manner: "Take any iron bar, or piece of a ſimilar form; and having heated it red-hot, hold it over a veſſel containing water, and touch it very ſlightly with a roll of ſulphur, which will immediately diſſolve it, and make it fall in drops into the water. As much iron as may be wanted being thus diſſolved, pour the water out of the veſſel: and pick out the drops formed by the melted iron from thoſe of the ſulphur, which contain little or no iron, and will be diſtinguiſhable from the other by their colour and weight." The iron will, by this means, he rendered ſo fuſible, that it will run with leſs heat than is required to melt lead; and may be employed for making caſts of medals, and many other ſuch purpoſes, with great convenience and advantage.

Impreſſions of medals, having the ſame effect as caſts, may be made alſo of iſinglaſs glue, by the following means. Melt the iſinglaſs, beaten, as when commonly uſed, in an earthen pipkin, with the addition of as much water as will cover it, ſtirring it gently till the whole is diſſolved; then with a bruſh of camels hair, cover the medal, which ſhould be previouſly well cleanſed and warmed, and then laid horizontally on a board or table, greaſed in the part around the medal. Let them reſt afterwards till the glue be properly hardened; and then, with a pin, raiſe the edge of it; and ſeparate it carefully from the medal: the caſt will be thus formed by the glue as hard as horn; and ſo light, that a thouſand will ſcarcely weigh an ounce. In order to render the relief of the medal more apparent, a ſmall quantity of carmine may be mixed with the melted iſinglaſs; or the medal may be previouſly coated with leaf gold by breathing on it, and then laying it on the leaf, which will by that means adhere to it; but the uſe of leaf gold is apt to impair a little the ſharpneſs of the impreſſion.

Impreſſions of medals may be likewiſe taken in putty; but it ſhould be the true kind made of calx of tin, and drying oil. Theſe may be formed in the moulds, previouſly taken in plaſter or ſulphur; or moulds may be made in its own ſubſtance, in the manner directed for thoſe of the plaſter. Theſe impreſſions will be very ſharp and hard; but the greateſt diſadvantage that attends them, is their drying very ſlowly, and being liable in the mean time to be damaged.

Impreſſions of prints, or other engravings, may be taken from copperplates, by cleanſing them thoroughly, and pouring plaſter upon them; but the effect in this way is not ſtrong enough for the eye; and therefore the following method is preferable, where ſuch impreſſions on plaſter are deſired.

Take vermilion, or any other coloured pigment, finely powdered, and rub it over the plate: then paſs a folded piece of paper, or the flat part of the hand, over the

Caſting. the plate, to take off the colour from the lights or parts where there is no engraving; the proceeding muſt then be the ſame as where no colour is uſed. This laſt method is alſo applicable to the making of impreſſions of copperplates on paper with dry colours; for the plate being prepared as here directed, and laid on the paper properly moiſtened, and either paſſed under the rolling preſs, or any other way ſtrongly forced down on the paper, an impreſſion of the engraving will be obtained.

Impreſſions may be likewiſe taken from copperplates, either on plaſter or paper, by means of the ſmoke of a candle or lamp; if, inſtead of rubbing them with any colour, the plate be held over the candle or lamp till the whole ſurface become black, and then wiped off by the flat of the hand, or paper.

Theſe methods are not, however, of great uſe in the caſe of copperplates, except where impreſſions may be deſired on occaſions where printing ink cannot be procured: but as they may be applied likewiſe to the taking impreſſions from ſnuff boxes, or other engraved ſubjects, by which means deſigns may be inſtantly borrowed by artiſts or curious perſons, they may in ſuch inſtances be very uſeful.

The expedient of taking impreſſions by the ſmoke of a candle or lamp may be employed alſo for botanical purpoſes in the caſe of leaves, as a perfect and durable repreſentation of not only the general figure, but the contexture and diſpoſition of the larger fibres, may be extemporaneouſly obtained at any time. The ſame may be nevertheleſs done in a more perfect manner, by the uſe of linſeed oil, either alone, or mixed with a ſmall proportion of colour, where the oil can be conveniently procured: but the other method is valuable on account of its being practicable at almoſt all ſeaſons, and in all places, within the time that the leaves will keep freſh and plump. In taking theſe impreſſions it is proper to bruiſe the leaves, ſo as to take off the projections of the large ribs, which might prevent the other parts from plying to the paper.

Leaves, as alſo the petals, or flower leaves, of plants, may themſelves be preſerved on paper, with their original appearance, for a conſiderable length of time, by the following means.—Take a piece of paper, and rub it over with iſinglaſs glue treated as above directed for taking impreſſions from medals; and then lay the leaves in a proper poſition on the paper. The glue laid on the paper being ſet, bruſh over the leaves with more of the ſame; and that being dry likewiſe, the operation will be finiſhed, and the leaves ſo ſecured from the air and moiſture, that they will retain their figure and colour much longer than by any other treatment.

Butterflies, or other ſmall animals of a flat figure, may alſo be preſerved in the ſame manner.

Casting is alſo ſometimes uſed for the quitting, laying, or throwing aſide any thing; thus deer caſt their horns, ſnakes their ſkins, lobſters their ſhells, hawks their feathers, &c. annually.

Caſting of feathers is more properly called *moulting* or *mewing*.

A horſe *caſts* his hair, or coat, at leaſt once a-year, viz. in the ſpring, when he caſts his winter coat; and ſometimes, at the cloſe of autumn, he caſts his ſummer coat, in caſe he has been ill kept. Horſes alſo ſometimes *caſt* their hoofs, which happens frequently to coach horſes brought from Holland; theſe being bred in a moiſt marſhy country, have their hoofs too flabby: ſo that coming into a drier ſoil, and leſs juicy provender, their hoofs fall off, and others that are firmer ſucceed. Caſting, Caſtle.

Casting a Colt, denotes a mare's proving abortive.

Casting Net, a ſort of fiſhing net, ſo called, becauſe it is to be *caſt* or thrown out; which when exactly done, nothing eſcapes it, but weeds and every thing within its extent are brought away.

CASTLE, a fortreſs or place rendered defenſible either by nature or art. It frequently ſignifies with us the principal manſion of noblemen. In the time of Henry II. there were no leſs than 1115 caſtles in England, each of which contained a manor.

Castles, walled with ſtone, and deſigned for reſidence as well as defence, are, for the moſt part, according to Mr Groſe, of no higher antiquity than the Conqueſt; for although the Saxons, Romans, and even, according to ſome writers on antiquity, the ancient Britons, had caſtles built with ſtone; yet theſe were both few in number, and at that period, through neglect or invaſions, either deſtroyed or ſo much decayed, that little more than their ruins were remaining. This is aſſerted by many of our hiſtorians and antiquaries, and aſſigned as a reaſon for the facility with which William made himſelf maſter of this country.

This circumſtance was not overlooked by ſo good a general as the Conqueror; who, effectually to guard againſt invaſions from without, as well as to awe his newly acquired ſubjects, immediately began to erect caſtles all over the kingdom, and likewiſe to repair and augment the old ones. Beſides, as he had parcelled out the lands of the Engliſh amongſt his followers, they, to protect themſelves from the reſentment of thoſe ſo deſpoiled, built ſtrong holds and caſtles on their eſtates. This likewiſe cauſed a conſiderable increaſe of theſe fortreſſes; and the turbulent and unſettled ſtate of the kingdom in the ſucceeding reigns, ſerved to multiply them prodigiouſly, every baron or leader of a party building caſtles; inſomuch, that towards the latter end of the reign of King Stephen, they amounted to the almoſt incredible number of 1115.

As the feudal ſyſtem gathered ſtrength, theſe caſtles became the heads of baronies. Each caſtle was a manor: and its caſtelain, owner, or governor, the lord of that manor. Markets and fairs were directed to be held there; not only to prevent frauds in the king's duties or cuſtoms, but alſo as they were eſteemed places where the laws of the land were obſerved, and as ſuch had a very particular privilege. But this good order did not long laſt: for the lords of caſtles began to arrogate to themſelves a royal power, not only within their caſtles, but likewiſe its environs; exerciſing judicature both civil and criminal, coining of money, and arbitrarily ſeizing forage and proviſion for the ſubſiſtence of their garriſons, which they afterwards demanded as a right: at length their inſolence and oppreſſion grew to ſuch a pitch, that, according to William of Newbury, "there were in England as many kings, or rather tyrants, as lords of caſtles;" and Matthew Paris ſtyles *Groſe's Antiquities of England and Wales*, vol. i. Preface.

Caſtle. ſtyles them very neſts of devils, and dens of thieves. Caſtles were not ſolely in the poſſeſſion of the crown and the lay barons, but even biſhops had theſe fortreſſes; though it ſeems to have been contrary to the canons, from a plea made uſe of in a general council, in favour of King Stephen, who had ſeized upon the ſtrong caſtles of the biſhops of Lincoln and Saliſbury. This prohibition (if ſuch exiſted) was, however, very little regarded; as in the following reigns many ſtrong places were held, and even defended, by the eccleſiaſtics: neither was more obedience afterwards paid to a decree made by the pope at Viterbo, the fifth of the kalends of June 1220, wherein it was ordained, that no perſon in England ſhould keep in his hands more than two of the king's caſtles.

The licentious behaviour of the garriſons of theſe places becoming intolerable, in the treaty between King Stephen and Henry II. when only duke of Normandy, it was agreed, that all the caſtles built within a certain period ſhould be demoliſhed; in conſequence of which many were actually raſed, but not the number ſtipulated.

The few caſtles in being under the Saxon government, were probably, on occaſion of war or invaſions, garriſoned by the national militia, and at other times ſlightly guarded by the domeſtics of the princes or great perſonages who reſided therein; but after the Conqueſt, when all the eſtates were converted into baronies held by knight's ſervice, caſtle guard coming under that denomination, was among the duties to which particular tenants were liable. From theſe ſervices the biſhops and abbots, who till the time of the Normans had held their lands in frank almoign, or free alms, were, by this new regulation, not exempted; they were not indeed, like the laity, obliged to perſonal ſervice, it being ſufficient that they provided fit and able perſons to officiate in their ſtead. This was however at firſt ſtoutly oppoſed by Anſelm archbiſhop of Canterbury; who being obliged to find ſome knights to attend King William Rufus in his wars in Wales, complained of it as an innovation and infringement of the rights and immunities of the church.

It was no uncommon thing for the Conqueror and the kings of thoſe days to grant eſtates to men of approved fidelity and valour, on condition that they ſhould perform caſtle guard in the royal caſtles, with a certain number of men, for ſome ſpecified time; and ſometimes they were likewiſe bound by their tenures to keep in repair and guard ſome particular tower or bulwark, as was the caſe at Dover caſtle.

In proceſs of time theſe ſervices were commuted for annual rents, ſometimes ſtyled *wardpenny*, and waytſee, but commonly *caſtleguard* rents, payable on fixed days, under prodigious penalties called *furfizes*. At Rocheſter, if a man failed in the payment of his rent of caſtle guard on the feaſt of St Andrew, his debt was doubled every tide during the time for which the payment was delayed. Theſe were afterwards reſtrained by an act of parliament made in the reign of King Henry VIII. and finally annihilated, with the tenures by knight's ſervice in the time of Charles II. Such caſtles as were private property were guarded either by mercenary ſoldiers, or the tenants of the lord or owner.

Caſtles which belonged to the crown, or fell to it either by forfeiture or eſcheat, (circumſtances that frequently happened in the diſtracted reigns of the feudal times), were generally committed to the cuſtody of ſome truſty perſon, who ſeems to have been indifferently ſtyled governor and conſtable. Sometimes alſo they were put into the poſſeſſion of the ſheriff of the county, who often converted them into priſons. That officer was then accountable at the exchequer, for the farm or produce of the lands belonging to the places intruſted to his care, as well as all other profits; he was likewiſe, in caſe of war or invaſion, obliged to victual and furniſh them with munition out of the iſſues of his county; to which he was directed by writ of privy ſeal. Caſtle.

The materials of which caſtles were built, varied according to the places of their erection: but the manner of their conſtruction ſeems to have been pretty uniform. The outſides of the walls were generally built with the ſtones neareſt at hand, laid as regularly as their ſhapes would admit; the inſides were filled up with the like materials, mixed with a great quantity of fluid mortar, which was called by the workmen grout-work.

The general ſhape or plan of theſe caſtles depended entirely on the caprice of the architects, or the form of the ground intended to be occupied; neither do they ſeem to have confined themſelves to any particular figure in their towers; ſquare, round, and polygonal, oftentimes occuring in the original parts of the ſame building.

The ſituation of the caſtles of the Anglo-Norman kings and barons was moſt commonly on an eminence, and near a river; a ſituation on ſeveral accounts eligible. The whole ſite of the caſtle (which was frequently of great extent and irregular figure) was ſurrounded by a deep and broad ditch, ſometimes filled with water, and ſometimes dry, called the *foſſe*. Before the great gate was an outwork, called a *barbacan*, or *antemural*, which was a ſtrong and high wall, with turrets upon it, deſigned for the defence of the gate and drawbridge. On the inſide of the ditch ſtood the wall of the caſtle, about eight or ten feet thick, and between 20 and 30 feet high, with a parapet, and a kind of embraſures called *crennels*, on the top. On this wall at proper diſtances ſquare towers of two or three ſtories high were built, which ſerved for lodging ſome of the principal officers of the proprietor of the caſtle, and for other purpoſes: and on the inſide were erected lodgings for the common ſervants or retainers, granaries, ſtorehouſes, and other neceſſary offices. On the top of this wall, and on the flat roofs of theſe buildings, ſtood the defenders of the caſtle, when it was beſieged, and from thence diſcharged arrows, darts, and ſtones on the beſiegers. The great gate of the caſtle ſtood in the courſe of this wall, and was ſtrongly fortified with a tower on each ſide, and rooms over the paſſage, which was cloſed with thick folding doors of oak, often plated with iron, and with an iron portcullis or grate let down from above. Within this outward wall was a large open ſpace or court, called, in the largeſt and moſt perfect caſtles, the *outer bayle*, or *ballium*, in which ſtood commonly a church or chapel. On the inſide of this outer bayle was another ditch, wall, gate, and towers, encloſing the inner bayle or court, within which the chief tower or *keep* was built. This was a very large ſquare fabric, four or five ſtories high,

Caſtle. high, having ſmall windows in prodigious thick walls, which rendered the apartments within it dark and gloomy. This great tower was the palace of the prince, prelate, or baron, to whom the caſtle belonged, and the reſidence of the conſtable or governor. Under ground were diſmal dark vaults, for the confinement of priſoners, which made it ſometimes be called the *dungeon*. In this building alſo was the great hall, in which the owner diſplayed his hoſpitality, by entertaining his numerous friends and followers. At one end of the great halls of caſtles, palaces, and monaſteries, there was a place raiſed a little above the reſt of the floor, called the *deis*, where the chief table ſtood, at which perſons of the higheſt rank dined. Though there were unqueſtionably great variations in the ſtructure of caſtles, yet the moſt perfect and magnificent of them ſeem to have been conſtructed nearly on the above plan. Such, to give one example, was the famous caſtle of Bedford, as appears from the following account of the manner in which it was taken by Henry III. A. D. 1224. The caſtle was taken by four aſſaults. "In the firſt was taken the barbacan; in the ſecond the outer ballia; at the third attack, the wall by the old tower was thrown down by the miners, where, with great danger, they poſſeſſed themſelves of the inner ballia, through a chink; at the fourth aſſault the miners ſet fire to the tower, ſo that the ſmoke burſt out, and the tower itſelf was cloven to that degree, as to ſhow viſibly ſome broak chinks: whereupon the enemy ſurrendered." See a repreſentation of a caſtle in Plate CXXXV. where 1 is the barbacan, 2, the ditch or moat, 3 the wall of the outer ballium, 4 the outer ballium, 5 the artificial mount, 6 the wall of the inner ballium, 7 the inner ballium, 8 the keep or dungeon.

Before the acceſſion of James VI. to the throne of England, the ſituation of Scotland was ſuch, that every baron's houſe was more or leſs fortified, according to the power and conſequence of its lord, or according to the ſituation of the caſtle. Near Edinburgh or Stirling, where the inhabitants were more poliſhed in their manners, and overawed by the ſeat of government, no more was neceſſary than towers capable of reſiſting the curſory attack of robbers and thieves, who never durſt ſtop to make a regular inveſtment, but plundered by ſurpriſe, and, if repulſed, inſtantly fled away. Such was Melville Caſtle. It anciently conſiſted of a ſtrong built tower of three ſtories, embattled at the top, and was ſufficiently ſtrong to reſiſt a ſudden attack, unaided by artillery, or other engines of war. But, when further removed, as in Perthſhire, Inverneſsſhire, or Aberdeenſhire, then it was neceſſary to be better defended, and the aids of a peel or dungeon, with outer walls, moat, and wet ditch, barnakin, &c. added to enable the powerful lord to reſiſt the formidable attack of his powerful adverſary. The hiſtory of Scotland, ſo late as the reign of the Stuart family, affords a number of melancholy inſtances of inveterate feuds among the greater and leſſer barons of that period; by which every mode of fortification then in uſe was ſeldom adequate to the defence of the caſtle againſt the ſtorm or blockade of the enraged chieftan. The caſtle of Doun ſeems to anſwer this deſcription of fortification, and has made ſeveral gallant defences, in the annals of Scotland. The third kind of fortreſſes we meet with in Scotland are thoſe ſituated on the borders of England, or on the ſea coaſts of the kingdom, and in the weſtern iſles, and very remote places. Many of the old caſtles in Scotland were ſituated on an iſland, in a deep lake, or on a peninſula, which by a broad deep cut was made an iſland. Of this kind was Lochmaben, in the ſtewartry of Annandale, the caſtle of Cloſeburn in the ſhire of Nithſdale, the caſtle of the Rive, ſituated on the river Dee in the ſhire of Galloway, Lochleven caſtle, and many others. Caſtle.

This kind of fortreſs was only acceſſible in a hard froſt, or by boats, which were not eaſily tranſported by a people deſtitute of good roads and wheel carriages. In fact, they could only be taken by ſurpriſe or blockade; the firſt very difficult, the ſecond very tedious; ſo that, before the uſe of artillery, they might be deemed almoſt impregnable. On that account, their ſituation was very deſirable in the inland parts of Scotland.

On the ſea coaſts of Scotland we generally find the ſtrongeſt and moſt ancient, as well as the moſt impregnable caſtles. Theſe had to defend themſelves from the invaſion of the foreign enemy, as well as the attacks of the domeſtic foe. Thus we find the barons, whole lands extended to the ſea coaſt, perched, like the eagle, on the moſt inacceſſible rocks that lay within their poſſeſſions. Of this kind were Slains caſtle, Tantallon, and Dunottar on the eaſt coaſt, and Dunvegan in the iſle of Sky, with Dunolly on the weſt coaſt. Theſe muſt have been moſt uncomfortable retreats, except to a barbarous people, or when a preſſing danger forced the baron to ſeek his ſafety in the only poſſible retreat left him.

Caſtle, in ancient writers, denotes a town or village ſurrounded with a ditch and wall, furniſhed with towers at intervals, and guarded by a body of troops. The word is originally Latin, *caſtellum*, a diminutive from *caſtrum*. *Caſtellum* originally ſeems to have ſignified a ſmaller fort for a little garriſon: though Suetonius uſes the word where the fortification was large enough to contain a cohort. The *caſtella*, according to Vegetius, were often like towns, built on the borders of the empire, and where there were conſtant guards and fences againſt the enemy. Horſley takes them for much the ſame with what were otherwiſe denominated *ſtations*.

Caſtle, or *Caſtle-ſteed*, is alſo an appellation given by the country people in the north to the Roman *caſtella*, as diſtinguiſhed from the *caſtra ſtativa* which they uſually call *cheſters*. Horſley repreſents this as an uſeful criterion, whereby to diſcover or diſtinguiſh a Roman camp or ſtation. There are ſeveral of theſe caſtella on Severus's wall: they are generally 60 feet ſquare; their north ſide is formed by the wall itſelf which falls in with them; the intervals between them are from ſix furlongs and a half to ſeven; they ſeem to have ſtood cloſeſt where the ſtations are wideſt. The neighbouring people call them *caſtles*, or *caſtle ſteeds*, by which it ſeems probable that their ancient Latin name had been *caſtellum*. Some modern writers call them *mile caſtles*, or military *caſtellæ*; Horſley ſometimes *exploratory caſtles*. In theſe *caſtella* the *areans* had their ſtation, who were an order of men whoſe buſineſs was to make incurſions into the enemies country, and give intelligence of their motions.

Caſtle, in the ſea language, is a part of the ſhip, of

Caſtle || Caſtor.

of which there are two; the forecaſtle, being the elevation at the prow, or the uppermoſt deck towards the mizen, the place where the kitchens are. Hindcaſtle is the elevation which reigns on the ſtern, over the laſt deck, where the officers cabins and places of aſſembly are.

CASTLE, *Edmund.* See CASTEL.

CASTLE-Bar, a borough and market town, capital of the county of Mayo in Ireland, is a well-inhabited place, and carries on a briſk trade: it has a barrack for a troop of horſe; and there is here a charter ſchool capable of receiving 50 children, and endowed with two acres of land, rent free, by the right honourable Lord Lucan, who has alſo granted a leaſe of 20 acres more at a pepper corn yearly.

CASTLE-Cary, a remarkable Roman ſtation about four miles weſt from Falkirk on the borders of Stirlingſhire in Scotland. It comprehends ſeveral acres of ground, is of a ſquare form, and is ſurrounded with a wall of ſtone and mortar: all the ſpace within the walls has been occupied by buildings, the ruins of which have raiſed the earth eight or ten feet above its natural ſurface; ſo that the fort now ſeems like a hill top ſurrounded with a ſunk fence. In 1770, ſome workmen employed in ſearching for ſtones for the great canal, which paſſes very near it, diſcovered ſeveral apartments of ſtone; and in one of them a great number of ſtones about two feet in length, and ſtanding erect, with marks of fire upon them, as if they had been employed in ſupporting ſome veſſel under which fire was put. In a hollow of the rock near this place, in 1771, a conſiderable quantity of wheat quite black with age was found, with ſome wedges and hammers ſuppoſed to be Roman.

CASTLE-Riſing, a borough town of Norfolk in England, which ſends two members to parliament. E. Long. 0. 40. N. Lat. 52. 46.

CASTLE-Work, ſervice or labour done by inferior tenants, for the building and upholding caſtles of defence, toward which ſome gave their perſonal aſſiſtance, and others paid their contributions. This was one of the three neceſſary charges to which the Anglo-Saxons were expreſsly ſubject.

CASTLETOWN, the capital of the iſle of Man, ſeated on the ſouth-weſt part of the iſland. It has a ſtrong caſtle; but of no great importance, on account of its diſtance from the rocky and ſhallow harbour. W. Long. 4. 39. N. Lat. 53. 30.

CASTOR, the BEAVER, in *Zoology*, a genus of quadrupeds belonging to the order of glires. See MAMMALIA *Index*.

CASTOR, in *Aſtronomy*, a moiety of the conſtellation GEMINI; called alſo APOLLO. Its latitude northwards, for the year 1700, according to Hevelius, was 10° 4′ 23″; and its longitude, of Cancer, 17° 4′ 14″. is alſo called Raſalgenze, Apollo, Aphellan, Avellar, Anelar.

CASTOR and Pollux, in Pagan mythology. Jupiter having an amour with Leda, the wife of Tyndarus king of Sparta, in the form of a ſwan, ſhe brought forth two eggs, each containing twins. From that impregnated by Jupiter proceeded Pollux and Helena, who were both immortal: from the other Caſtor and Clytemneſtra, who being begot by Tyndarus were both mortal. They were all, however, called by the common name of *Tyndaridæ*. Theſe two brothers entered into an inviolable friendſhip; they went with the other noble youths of Greece in the expedition to Colchis, and, on ſeveral occaſions, ſignalized themſelves by their courage; but Caſtor being at length killed, Pollux obtained leave to ſhare his own immortality with him; ſo that they are ſaid to live and die alternately every day: for, being tranſlated into the ſkies, they form the conſtellation of Gemini, one of which ſtars riſes as the other ſets.

Caſtor, Caſtoreum.

A martial dance, called the *Pyrrhic* or *Caſtorian*, dance, was invented in honour of thoſe deities, whom the Cephelenſes placed among the Dii Magni, and offered to them white lambs. The Romans alſo paid them particular honours on account of the aſſiſtance they are ſaid to have given them in an engagement againſt the Latins; in which, appearing mounted on white horſes, they turned the ſcale of victory in their favour, for which a temple was erected to them in the forum.

CASTOR and Pollux, a fiery meteor, which at ſea appears ſometimes ſticking to a part of the ſhip, in form of one, two, or even three or four fire balls: when one is ſeen alone, it is more properly called *Helena*; two are denominated Caſtor and Pollux, and ſometimes Tyndaridæ. Caſtor and Pollux are called by the Spaniards, San Elmo; by the French St Elme, St Nicholas, St Clare, St Helene; by the Italians, Hermo; by the Dutch, Tree Vuuren.

Caſtor and Pollux are commonly judged to portend a ceſſation of the ſtorm, and a future calm; being rarely ſeen till the tempeſt is nigh ſpent. Helena alone portends ill, and witneſſes the ſevereſt part of the ſtorm yet behind. When the meteor ſticks to the maſts, yards, &c. they conclude, from the air's not having motion enough to diſſipate this flame, that a profound calm is at hand; if it flutter about, it indicates a ſtorm.

CASTOREUM, in the *Materia Medica*, CASTOR; the inguinal glands of the beaver. The ancients had a notion that it was lodged in the teſticles; and that the animal, when haid preſſed, would bite them off, and leave them to its purſuers, as if conſcious of what they wanted to deſtroy him for. The beſt ſort of caſtor is what comes from Ruſſia. So much is Ruſſian caſtor ſuperior to the American, that two guineas per pound are paid for the former, and only 8s. 6d, for the latter. The Ruſſian caſtor is in large hard round cods, which appear, when cut, full of a brittle, red, liver-coloured ſubſtance, interſperſed with membranes and fibres exquiſitely interwoven. An inferior ſort is brought from Dantzic, and is generally fat and moiſt. The American caſtor, which is the worſt of all, is in longiſh thin cods. Ruſſia caſtor has a ſtrong diſagreeable ſmell; and an acrid, bitteriſh, and nauſeous taſte. Water extracts the nauſeous part, with little of the finer bitter; rectified ſpirit extracts this laſt without much of the nauſeous; proof ſpirit both: water elevates the whole of its flavour in diſtillation; rectified ſpirit brings over nothing. Caſtor is looked upon as one of the capital nervine and antihyſteric medicines: ſome celebrated practitioners, nevertheleſs, have doubted its virtues; and Newmann and Stahl de-

Caſtration. clare it inſignificant. Experience, however, has ſhown that the virtues of caſtor are conſiderable, though leſs than they have been generally ſuppoſed.

CASTRATION, in *Surgery*, the operation of gelding, i. e. of cutting off the teſticles, and putting a male animal out of the capacity of generation.

Caſtration is much in uſe in Aſia, eſpecially among the Turks, who practiſe it on their ſlaves, to prevent any commerce with their women. The Turks often make a general amputation.

Caſtration alſo obtains in Italy, where it is uſed with a view to preſerve the voice for ſinging. See EUNUCH.

The Perſians, and other eaſtern nations, have divers methods of making eunuchs, different from thoſe which obtain in Europe: we ſay, of making eunuchs, for it is not always done among them by cutting, or even colliſion. Cicuta and other poiſonous herbs do the ſame office, as is ſhown by Paulus Ægineta. Thoſe eunuchiſed in this manner are called *thlibiæ*. Beſides which there is another ſort called *thlaſiæ*, in whom the genitals are left entire, and only the veins which ſhould feed them are cut; by which means the parts do indeed remain, but ſo lax and weak, as to be of no uſe.

Caſtration was for ſome time the puniſhment of adultery. By the laws of the Viſigoths, Sodomites underwent the ſame puniſhment.

By the civil law, it is made penal in phyſicians and ſurgeons to caſtrate, even with conſent of the party, who is himſelf included in the ſame penalty, and his effects forfeited. The offence of Mayhem by caſtration is, according to all our old writers, felony; though committed upon the higheſt provocation. See a record to this purpoſe of Henry III. tranſcribed by Sir Edward Coke, 3 Inſt. 62. or Blackſtone's Com. vol. iv. p. 206.

Caſtration is ſometimes found neceſſary on medicinal conſiderations, as in mortifications, and ſome other diſeaſes of the teſticles, eſpecially the *ſarcocele* and *varicocele*. Some have alſo uſed it in maniac caſes.

CASTRATION is alſo in ſome ſort practiſed on women. Athenæus mentions that King Andramytes was the firſt who caſtrated women. Heſychius and Suidas ſay Gyges did the ſame thing. Galen obſerves, that women cannot be caſtrated without danger of life; and Dalechampius, on the fore-mentioned paſſage of Athenæus, holds, that it is only to be underſtood of ſimple padlocking.

CASTRATION, in reſpect of brutes, is called GELDING and SPAYING.

CASTRATION alſo denotes the art of retrenching, or cutting away any part of a thing from its whole.—Caſtrating a book, among bookſellers, is the taking out ſome leaf, ſheet, or the like, which renders it imperfect and unfit for ſale. The term is alſo applied to the taking away particular paſſages, on account of their obſcenity, too great freedom with reſpect to government, &c.

CASTRATION, among botaniſts, a term derived from the fancied analogy betwixt plants and animals. The caſtration of plants conſiſts in cutting off the *antheræ*, or tops of the ſtamina, before they have attained maturity, and diſperſed the pollen or fine duſt contained within their ſubſtance. This operation has been frequently practiſed by the moderns, with a view to eſtabliſh or confute the doctrine of the ſexes of plants; the antheræ or tops being conſidered by the ſexualiſts as the male organs of generation. The experiment of caſtration ſucceeds principally on plants which, like the melon, have their male flowers detached from the female. In ſuch as have both male and female flowers contained within the ſame covers, this operation cannot be eaſily performed without endangering the neighbouring organs. The reſult of experiments on this ſubject by Linnæus, Alſton, and other eminent botaniſts, may be ſeen under the article BOTANY. Caſtrel || Caſtruccio.

CASTREL, a kind of hawk reſembling the lanner in ſhape, but the hobby in ſize. The caſtrel is alſo called keſtrel, and is of a ſlow and cowardly kind; her game is the grouſe, though ſhe will kill a partridge.

CASTRES, a city of Languedoc in France, about 35 miles eaſt of Thouloufe. E. Long. 2°. N. Lat. 43. 40. It is a biſhop's ſee.

CASTRO, the capital of the iſland of Chiloe, on the coaſt of Chili in South America. W. Long. 82. S. Lat. 43.

CASTRO is alſo the capital of a duchy of the ſame name in the pope's territories in Italy, ſituated on the confines of Tuſcany. E. Long. 12. 35. N. Lat. 42. 30.

CASTRO, *Pietro de*, a celebrated painter, who flouriſhed about the middle of the 17th century. The ſubjects which this great artiſt choſe to paint, were what are diſtinguiſhed by the name of ſtill life; vaſes, ſhells, muſical inſtruments, gems, veſſels of gold, ſilver, and cryſtal, books, and rich bracelets: and in thoſe ſubjects his choice and diſpoſition were elegant, and his execution admirable.

CASTRUCCIO, CASTRACANI, a celebrated Italian general, was born (no body knows of whom) at Lucca in Tuſcany in 1284, and left in a vineyard covered with leaves, where he was found by Dianora a widow lady, the ſiſter of Antonio, a canon of St Michael in Lucca, who was deſcended from the illuſtrious family of the Caſtracani. The lady having no children, ſhe reſolved to bring him up, and educated him as carefully as he had been her own. She intended him for a prieſt; but he was ſcarcely 14 years old when he began to devote himſelf to military ſports, and thoſe violent exerciſes which ſuited his great ſtrength of body. The factions named the *Guelfs* and *Gibelines* then ſhared all Italy between them; divided the popes and the emperors; and engaged in their different intereſts not only the members of the ſame town, but even thoſe of the ſame family. Franciſco, a conſiderable perſon on the ſide of the Gibelines, obſerving Caſtruccio's uncommon ſpirit and great qualities, prevailed with Antonio to let him turn ſoldier; on which Caſtruccio ſoon became acquainted with every thing belonging to that profeſſion, and was made a lieutenant of a company of foot by Franciſco Guinigi. In his firſt campaign he gave ſuch proofs of his courage and conduct as ſpread his fame all over Lombardy; and Guinigi, dying ſoon after, committed to him the care of his ſon and the management of his eſtate. Still diſtinguiſhing himſelf by his exploits, he filled his commander in chief with ſuch jealouſy and envy, that he was impriſoned by ſtratagem in order to be put to death. But the people of Lucca ſoon releaſed him, and afterwards choſe him for their ſovereign prince.—The Gibelines conſidered him as the chief of their party;

Caſtruccio, Caſtrum Doloris.

party; and thoſe who had been baniſhed from their country fled to him for protection, and unanimouſly promiſed, that if he could reſtore them to their eſtates, they would ſerve him ſo effectually that the ſovereignty of their country ſhould be his reward. Flattered by theſe promiſes, he entered into a league with the prince of Milan. He kept his army conſtantly on foot, employing it as beſt ſuited his own deſigns. For ſervices he had done the pope, he was made ſenator of Rome with more than ordinary ceremony; but while there, received news which obliged him to haſten back to Lucca. The Florentines entered into a war with him, but Caſtruccio fought his way through them; and the ſupreme authority of Tuſcany was ready to fall into his hands, when a period was put to his life. In May 1328, he gained a complete victory over his enemies, who amounted to 30,000 foot and 10,000 horſe; in which 22,000 of them were ſlain, with the loſs of not quite 1600 of his own men; but as he was returning from the field of battle, tired with the action, and covered with ſweat, he halted a little, in order to thank and careſs his ſoldiers as they paſſed; when, the north wind blowing upon him, he was immediately ſeized with an ague, which he at firſt neglected, but it carried him off in a few days, in the 44th year of his age.

Machiavel, who has written the life of Caſtruccio, ſays, that he was not only an extraordinary man in his own age, but would have been ſo in any other. He was of a noble aſpect, and of the moſt winning addreſs. He had all the qualities that make a man great; was grateful to his friends, juſt to his ſubjects, terrible to his enemies. No man was more forward to encounter dangers; no man more careful to eſcape them. He had an uncommon preſence of mind, and often made rapartees with great ſmartneſs. Some of them are recorded, which diſcover a ſingular turn of humour; and, for a ſpecimen, we ſhall mention three or four of them.—Paſſing one day through a ſtreet where there was a houſe of bad fame, he ſurpriſed a young man, who was juſt coming out, and, who, upon ſeeing him, was all over bluſhes and confuſion: "Friend, you ſhould not be aſhamed when you come out, but when you go in."—One aſking a favour of him with a thouſand impertinent and ſuperfluous words: "Hark you, friend; when you would have any thing with me for the future, ſend another man to aſk it."—Another great talker having tired him with a tedious diſcourſe, excuſed himſelf at laſt, by ſaying, he was afraid he had been troubleſome. "No indeed, (replied he), for I did not mind one word you ſaid."—He was forced to put a citizen of Lucca to death, who had formerly been a great inſtrument of his advancement; and being reproached by ſomebody for having dealt ſo ſeverely with an old friend, replied, "No, you are miſtaken, it was with a new foe."—One of his courtiers, deſirous to regale him, made a ball and invited him to it. Caſtruccio came, entertained himſelf among the ladies, danced, and did other things which did not ſeem to comport with the dignity of his rank. One of his friends intimating that ſuch freedoms might diminiſh the reverence that ought to be paid him; "I thank you for your caution; but he who is reckoned wiſe all the day, will never be reckoned a fool at night."

CASTRUM DOLORIS, in middle age writers, denotes a catafalco, or a lofty tomb of ſtate, erected in honour of ſome perſon of eminence, uſually in the church where his body is interred; and decorated with arms, emblems, lights, and the like.

Caſts || Caſus Amiſſionis.

Eccleſiaſtical writers ſpeak of a ceremony of conſecrating a *caſtrum doloris*; the edifice was to be made to repreſent the body of the deceaſed, and the prieſt and deacon were to take their poſts, and ſay the prayers after the ſame manner as if the corpſe were actually preſent.

CASTS. See CASTING.

CASU CONSIMILI, in *Law*, a writ of entry granted where a tenant, by courteſy or for life, aliens either in fee, in tail, or for the term of another's life. It is brought by him in reverſion againſt the perſon to whom ſuch tenant does ſo alien to the prejudice of the reverſioner in the tenant's lifetime.

Casu Proviſo, in *Law*, a writ of entry founded on the ſtatute of Glouceſter, where a tenant in dower aliens the lands ſhe ſo holds in fee, or for life; and lies for the party in reverſion againſt the alliance.

CASUAL, ſomething that happens fortuitouſly, without any deſign, or any meaſures taken to bring it to paſs.

Casual Revenues, are thoſe which ariſe from forfeitures, confiſcations, deaths, attainders, &c.

Casual Theology, a denomination given to what is more frequently called CASUISTRY.

CASUALTY, in a general ſenſe, denotes an accident, or a thing happening by chance, not deſign. It is particularly uſed for an accident producing unnatural death.

CASUALTY, in *Scots Law*. *Caſualties of a ſuperior*, are thoſe duties and emoluments which a ſuperior has right to demand out of his vaſſal's eſtate, over and beſides the conſtant yearly duties eſtabliſhed by the *reddendo* of his charter upon certain caſual events.

CASUALTY, in *Metallurgy*. See CAUSALTY.

CASUIST, a perſon who propoſes to reſolve caſes of conſcience. Eſcobar has made a collection of the opinions of all the caſuiſts before him. M. le Feore, preceptor of Louis XIII. called the books of the caſuiſts the art of quibbling with God; which does not ſeem far from truth, by reaſon of the multitude of diſtinctions and ſubtleties they abound withal. Mayer has publiſhed a bibliotheca of caſuiſts, containing an account of all the writers on caſes of conſcience, ranged under three heads, the firſt comprehending the Lutheran, the ſecond the Calviniſt, and the third the Romiſh caſuiſts.

CASUISTRY, the doctrine and ſcience of conſcience and its caſes, with the rules and principles of reſolving the ſame; drawn partly from natural reaſon or equity; partly from authority of Scripture, the canon law, councils, fathers, &c. To caſuiſtry belongs the deciſion of all difficulties ariſing about what a man may lawfully do or not do; what is ſin or not ſin; what things a man is obliged to do in order to diſcharge his duty, and what he may let alone without breach of it.

CASUS AMISSIONIS, in *Scots Law*. In actions proving the tenor of obligations inextinguiſhable by the debtor's retiring or cancelling them, it is neceſſary for the purſuer, before he is allowed a proof of the tenor, to condeſcend upon ſuch a *caſus amiſſionis*, or accident

Cat ‖ Cat-Heads.

by which the writing was deſtroyed, as ſhows it was loſt while in the writer's poſſeſſion.

CAT, in *Zoology*. See FELIS, MAMMALIA *Index*.

CAT, in ſea affairs, a ſhip employed in the coal trade, formed from the Norwegian model. It is diſtinguiſhed by a narrow ſtern, projecting quarters, a deep *waiſte*, and by having ornamental figures on the prow. Theſe veſſels are generally built remarkably ſtrong, and carry from four to ſix hundred tons, or, in the language of their own mariners, from 20 to 30 *keels* of coals.

CAT, is alſo a ſort of ſtrong tackle, or combination of pulleys, to hook and draw the anchor perpendicularly up to the *cat-head*. See *CAT-Heads*.

CAT's Eye, or *Sun-ſtone* of the Turks, a kind of gem found chiefly in Siberia. Cat's eye is by the Latins called *oculus cati*, and ſometimes *onycopalus*, as having white zones or rings like the onyx, and its colours variable like OPAL, from which laſt it differs chiefly by its ſuperior hardneſs. It is very hard, and ſemitranſparent, and has different points, from whence the light is reflected with a kind of yellowiſh radiation ſomewhat ſimilar to the eyes of cats, from whence it had its name. The beſt of them are very ſcarce, and jewellers cut them round to the greateſt advantage. One of theſe ſtones, an inch in diameter, was in the poſſeſſion of the duke of Tuſcany.

CAT-fiſh, in *Ichthyology*. See SQUALUS, ICHTHYOLOGY *Index*.

CAT-Gut, a denomination given to ſmall ſtrings for fiddles, and other inſtruments, made of the inteſtines of ſheep or lambs, dried and twiſted together, either ſingly, or ſeveral together. Theſe are ſometimes coloured red, ſometimes blue, but are commonly left whitiſh or browniſh, the natural colour of the gut. They are alſo uſed by watchmakers, cutlers, turners, and other artificers. Great quantities are imported into England, and other northern countries, from Lyons and Italy.

CAT-Harpings, a purchaſe of ropes employed to brace in the ſhrouds of the lower maſts behind their yards, for the double purpoſe of making the ſhrouds more tight, and of affording room to draw in the yards more obliquely, to *trim* the ſails for a ſide-wind, when they are ſaid to be cloſe hauled.

CAT-Heads, two ſtrong ſhort beams of timber, which project almoſt horizontally over the ſhip's bows on each ſide of the bowſprit; being like two radii which extend from a centre taken in the direction of the bowſprit. That part of the cat-head which reſts upon the forecaſtle, is ſecurely bolted to the beams: the other part projects like a crane, as above deſcribed, and carries in its extremity two or three ſmall wheels or *ſheaves* of braſs or ſtrong wood, about which a rope called the *cat-fall*, paſſes and communicates with the cat-block, which alſo contains three ſheaves. The machine formed by this combination of pulleys is called the *Cat*, which ſerves to pull the anchor up to the cat-head, without tearing the ſhip's ſides with its flukes. The cat-head alſo ſerves to ſuſpend the anchor clear of the bow, when it is neceſſary to let it go: it is ſupported by a ſort of knee, which is generally ornamented with ſculpture. See Plate CXXXVI.

The cat-block is filled with a large and ſtrong hood, which catches the ring of the anchor when it is to be drawn up. Cat-Mint ‖ Catacombs.

CAT-Mint. See MENTHA, BOTANY *Index*.

CAT-Salt, a name given by our ſalt workers to a very beautifully granulated kind of common ſalt. It is formed out of the bittern, or leach brine, which runs from the ſalt when taken out of the pan. When they draw out the common ſalt from the boiling pans, they put it into long wooden troughs, with holes bored at the bottom for the brine to drain out; under theſe troughs are placed veſſels to receive this brine, and acroſs them ſmall ſticks to which the cat-ſalt affixes itſelf in very large and beautiful cryſtals. This ſalt contains ſome portion of the bitter purging ſalt, is very ſharp and pungent, and is white when powdered, though pellucid in the maſs. It is uſed by ſome for the table, but the greateſt part of what is made of it is uſed by the makers of hard ſoap.

CAT-Silver. See MICA.

CATACAUSTIC CURVES, in the higher geometry, that ſpecies of cauſtic curves which are formed by reflection. See FLUXIONS.

CATACHRESIS, in *Rhetoric*, a trope which borrows the name of one thing to expreſs another. Thus Milton, deſcribing Raphael's deſcent from the empyreal heaven to paradiſe, ſays,

> " Down thither prone in flight,
> " He ſpeeds, and through the vaſt ethereal ſky
> " Sails between worlds and worlds."

CATACOMB, a grotto, or ſubterraneous place for the burial of the dead.

Some derive the word *catacomb* from the place where ſhips are laid up, which the modern Latins and Greeks called *cumbæ*. Others ſay, that *cata* was uſed for *ad* and *catacumbas*, for *adtumbas*: accordingly, Dadin ſays, they anciently wrote *catatumbas*. Others fetch the word from the Greek, κατα, and κυμβος, a hollow, cavity, or the like.

Anciently the word *catacomb* was only underſtood of the tombs of St Peter and St Paul; and M. Chaſtelain obſerves, that, among the more knowing of the people of Rome, the word *catacomb* is never applied to the ſubterraneous burying-places hereafter mentioned, but only to a chapel in St Sebaſtian, one of the ſeven ſtational churches; where the ancient Roman kalendars ſay the body of St Peter was depoſited, under the conſulate of Tuſcus and Baſſus, in 258.

CATACOMBS of Italy; a vaſt aſſemblage of ſubterrancous ſepulchres about Rome, chiefly at about three miles from that city, in the Via Appia; ſuppoſed to be the ſepulchre of the martyrs; and which are viſited accordingly out of devotion, and relicks thence taken and diſperſed throughout the catholic countries, after having been firſt baptized by the pope under the name of ſome ſaint. Theſe *catacombs* are ſaid by many to be caves or cells wherein the primitive Chriſtians hid and aſſembled themſelves together, and where they interred ſuch among them as were martyred. Each *catacomb* is three feet broad, and eight or ten high; running in form of an alley or gallery, and communicating with others: in many places they extend within a league of Rome. There is no maſonry or vaulting therein, but each ſupports itſelf: the two ſides, which

Catacombs. which we may look on as the *parietes* or walls, were the places where the dead were depoſited; which were laid lengthwiſe, three or four rows over one another, in the ſame *catacomb*, parallel to the alley. They were commonly cloſed with large thick tyles, and ſometimes pieces of marble, cemented in a manner inimitable by the moderns. Sometimes, though very rarely, the name of the deceaſed is found on the tyle: frequently a palm is ſeen, painted or engraven, or the cypher Xp, which is commonly read *pro Chriſto*. The opinion held by many Proteſtant authors is, that the *catacombs* are heathen ſepulchres, and the ſame with the puticuli mentioned by Feſtus Pompeius; maintaining, that whereas it was the practice of the ancient Romans to burn their dead, the cuſtom was, to avoid expence, to throw the bodies of their ſlaves to rot in holes of the ground; and that the Roman Chriſtians, obſerving at length, the great veneration paid to relicks, reſolved to have a ſtock of their own: entering therefore the *catacombs*, they added what cyphers and inſcriptions they pleaſed; and then ſhut them up again, to be opened on a favourable occaſion. Thoſe in the ſecret, add they, dying or removing, the contrivance was forgot, till chance opened them at laſt. But this opinion has even leſs of probability than the former. Mr Monro, in the *Philoſophical Tranſactions*, ſuppoſes the *catacombs* to have been originally the common ſepulchres of the firſt Romans, and dug in conſequence of theſe two opinions, viz. That ſhades hate the light; and that they love to hover about the places where the bodies are laid.

Though the catacombs of Rome have made the greateſt noiſe of any in the world, there are ſuch belonging to many other cities. Thoſe of Naples, according to Biſhop Burnet, are much more noble and ſpacious than the catacombs of Rome. Catacombs have alſo been diſcovered at Syracuſe and Catanea in Sicily, and in the iſland of Malta. The Roman catacombs take particular names from the churches in their neighbourhood, and ſeem to divide the circumference of the city without the walls between them, extending their galleries everywhere under, and a vaſt way from it; ſo that all the ground under Rome, and for many miles about it, ſome ſay 20, is hollow. The largeſt, and thoſe commonly ſhown to ſtrangers, are the catacombs of San Sebaſtiano, thoſe of Saint Agneſe, and the others in the fields a little off Saint Agneſe. Women are only allowed to go into the catacombs in the churchyard of the Vatican on Whitſun Monday, under pain of excommunication. There are men kept conſtantly at work in the *catacombs*. As ſoon as theſe labourers diſcover a grave with any of the ſuppoſed marks of a ſaint upon it, intimation is given to the cardinal camerlingo, who immediately ſends men of reputation to the place, where finding the palm, the monogram, the coloured glaſs, &c. the remains of the body are taken up with great reſpect, and tranſlated to Rome. After the labourers have examined a gallery, they ſtop up the entry that leads to it; ſo that moſt of them remain thus cloſed up; only a few being left open to keep up the trade of ſhowing them to ſtrangers. This, they ſay, is done to prevent people from loſing themſelves in theſe ſubterraneous labyrinths, which indeed has often happened; but more probably to deprive the public of the means of knowing whither and how far the catacombs are carried. Catacombs, Catalauni.

The method of preſerving the dead in catacombs ſeems to have been common to a number of the ancient nations. The catacombs of Egypt are ſtill extant about nine leagues from the city of Grand Cairo, and two miles from the city of Zaccara. They extend from thence to the pyramids of Pharaoh, which are about eight miles diſtant. They lie in a field covered with a fine running ſand, of a yellowiſh colour. The country is dry and hilly; the entrance of the tombs is choked up with ſand; there are many open, but more that are ſtill concealed.

The bodies found in catacombs, eſpecially thoſe of Egypt, are called *mummies*; and as their fleſh was formerly reckoned an efficacious medicine, they were much ſought after. In this work the labourers were often obliged to clear away the ſand for weeks together, without finding what they wanted. Upon coming to a little ſquare opening of about 18 feet in depth, they deſcend into it by holes for the feet placed at proper intervals; and there they are ſure of finding a mummy. Theſe caves, or *wells* as they call them there, are hollowed out of a white free ſtone, which is found in all this country a few feet below the covering of ſand. When one gets to the bottom of theſe, which are ſometimes 40 feet below the ſurface, there are ſeveral ſquare openings on each ſide into paſſages of 10 or 15 feet wide; and theſe lead to chambers of 15 or 20 feet ſquare. Theſe are all hewn out in the rock; and in each of the catacombs are to be found ſeveral of theſe apartments communicating with one another. They extend a great way under ground, ſo as to be under the city of Memphis, and in a manner to undermine its environs. In ſome of the chambers the walls are adorned with figures and hieroglyphics; in others the mummies are found in tombs, round the apartment, hollowed out in the rock.

The Egyptians ſeem to have excelled in the art of embalming and preſerving their dead bodies; as the mummies found in the Egyptian catacombs are in a better ſtate than the bodies found either in the Italian catacombs or thoſe of any other part of the world. See Embalming and Mummy.

Laying up the bodies in caves, is certainly the original way of diſpoſing of the dead; and appears to have been propagated by the Phœnicians throughout the countries to which they ſent colonies; the interring as we now do in the open air or in temples was firſt introduced by the Chriſtians. When an ancient hero died, or was killed in a foreign expedition, as his body was liable to corruption, and for that reaſon unfit to be tranſported entire, they fell on the expedient of burning, in order to bring home the aſhes, to oblige the *manes* to follow; that ſo his country might not be deſtitute of the benefit of his tutelage. It was thus burning ſeems to have had its original; and by degrees it became common to all who could bear the expences of it, and took place of the ancient burying: thus *catacombs* became diſuſed among the Romans, after they had borrowed the manner of burning from the Greeks, and then none but ſlaves were laid in the ground. See Burial, &c.

CATALAUNI, called alſo *Durocatalauni*, a town of

Catadromus || Catalogue.

of Gallia Belgica: *Catalauni*, the people. A name rather of the lower age than of claſſical antiquity. Now *Chalons ſur Marne*, in Champagne. E. Long. 4. 35. N. Lat. 48. 55.

CATADROMUS, from κατα and δρεμω, *I run*, in antiquity, a ſtretched ſloping rope in the theatres, down which the *funambuli* walked to ſhow their ſkill. Some have taken the word to ſignify the hippodrome or decurſorium, wherein the Roman knights uſed to exerciſe themſelves in running and fighting on horſeback. But the moſt natural meaning is that of a rope faſtened at one end to the top of the theatre, and at the other to the bottom, to walk or run down, which was the higheſt glory of the ancient *ſchænobates*, or *funambuli*. Elephants were alſo taught to run down the *catadromus*. Suetonius ſpeaks of the exploit of a Roman knight, who paſſed down the *catadromus* mounted on an elephant's back.

CATAGOGION, a heathen feſtival at Epheſus, celebrated on the 22d of January, in which the devotees run about the ſtreets, dreſſed in divers antic and unſeemly manners, with huge cudgels in their hands, and carrying with them the images of their gods; in which guiſe they raviſhed the women they met with, abuſed and often killed the men, and committed many other diſorders, to which the religion of the day gave a ſanction.

CATAGRAPHA, in antiquity, denote oblique figures or views of men's faces; anſwering to what the moderns call *profiles*.

Catagrapha are ſaid to be the invention of Simon Cleonæus, who firſt taught painters to vary the looks of their figures, and ſometimes direct them upwards, ſometimes downwards, and ſometimes ſidewards or backwards.

CATALEPSIS, or CATALEPSY, in *Medicine*, a kind of apoplexy, or a drowſy diſeaſe, wherein the patient is taken ſpeechleſs, ſenſeleſs, and fixed in the ſame poſture wherein the diſeaſe firſt ſeized him; his eyes open, without ſeeing or underſtanding. See MEDICINE *Index*.

CATALOGUE, a liſt or enumeration of the names of ſeveral books, men, or other things, diſpoſed according to a certain order.

Catalogues of books are digeſted in different manners, ſome according to the order of the times when the books were printed, as that of Mattaire; others according to their form and ſize, as the common bookſellers catalogues; others according to the alphabetical order of the authors names, as Hyde's catalogue of the Bodleian library; others according to the alphabetical order of matters or ſubjects, which are called *real or claſſical catalogues*, as thoſe of Lipenius and Draudius; laſtly, others are digeſted in a mixed method, partaking of ſeveral of the former, as De Seine's catalogue of Cardinal Sluſius's library, which is firſt divided according to the ſubjects or ſciences, and afterwards the books in each are recited alphabetically.

The moſt applauded of all catalogues is that of Thuanus's library, in which are united the advantages of all the reſt. It was firſt drawn up by the two Puteani in the alphabetical order, then digeſted according to the ſciences and ſubjects by Iſhm. Bullialdus, and publiſhed by F. Queſnel at Paris in 1679; and reprinted, though incorrectly, at Hamburgh, in 1704. The books are here ranged with juſtneſs under their ſeveral ſciences and ſubjects, regard being ſtill had to the nation, ſect, age, &c. of every writer. Add, that only the beſt and choiceſt books on every ſubject are found here, and the moſt valuable editions. Yet the catalogue of M. le Telliers archbiſhop of Rheims' library, made by M. Clement, is not inferior to any publiſhed in our age, either on account of the number and choice of the books, or the method of its diſpoſition. One advantage peculiar to this catalogue is, the multitude of anonymous and pſeudonymous authors detected in it, ſcarce to be met with elſewhere. Some even prefer it to Thuanus's catalogue, as containing a greater variety of claſſes and books on particular ſubjects. Catalogue of the Stars.

The conditions required in a catalogue are, that it indicate at the ſame time the order of the authors and of the matters, the form of the book, the number of volumes, the chronological order of the editions, the language it is written in, and its place in the library; ſo as that all theſe circumſtances may appear at once in the ſhorteſt, cleareſt, and exacteſt manner poſſible. In this view all the catalogues yet made will be found to be defective.

An anonymous French writer has laid down a new plan of a catalogue, which ſhall unite all the advantages and avoid all the inconveniences of the reſt.

The Jeſuits of Antwerp have given us a catalogue of the popes; which makes what they call their *Propilæum*.

CATALOGUE of the Stars, is a liſt of the fixed ſtars, diſpoſed in their ſeveral conſtellations; with the longitudes, latitudes, &c. of each; or according to their right aſcenſions, that is, the order of their paſſing over the meridian.

The firſt who undertook to reduce the fixed ſtars into a catalogue was Hipparchus Rhodius, about 120 years before Chriſt; in which he made uſe of the obſervations of Timocharis and Ariſtyllus for about 180 years before him. Ptolemy retained Hipparchus's catalogue containing 1026 fixed ſtars; though he himſelf made abundance of obſervations, with a view to a new catalogue, A. D. 140. About the year of Chriſt 880, Albategni, a Syrian, brought down the ſame to his time. Anno 1437, Ulugh Beigh, king of Parthia and India, made a new catalogue of 1022 fixed ſtars, ſince tranſlated out of Perſian into Latin by Dr Hyde. The third who made a catalogue from his own obſervations was Tycho Brahe, who determined the places of 777 ſtars for the year 1600, which Kepler from other obſervations of Tycho afterwards increaſed to the number of 1000 in the Rudolphine tables; adding thoſe of Ptolemy omitted by Tycho, and of other authors; ſo that his catalogue amounts to above 1160. At the ſame time, William landgrave of Heſſe, with his mathematicians Chriſtopher Rothmannus and Juſtus Byrgius, determined the places of 400 fixed ſtars by his own obſervations, with their places rectified for the year 1593; which Hevelius prefers to thoſe of Tycho's. Ricciolus, in his *Aſtronomia Reformata*, determined the places of 101 ſtars for the year 1700, from his own obſervations; for the reſt he followed Tycho's catalogue, altering it where he thought fit. Anno 1667, Dr Halley, in the iſland of St Helena, obſerved

Catalogue of the Stars.

obſerved 350 ſouthern ſtars not viſible in our horizon. The ſame labour was repeated by F. Noel in 1710, who publiſhed a new catalogue of the ſame ſtars conſtructed for the year 1687.

Bayer, in his *Uranometria*, publiſhed a catalogue of 1160 ſtars, compiled chiefly from Ptolemy and Tycho, in which every ſtar is marked with ſome letter of the Greek alphabet; the biggeſt ſtar in any conſtellation being denoted by the firſt letter, the next by the ſecond, &c. and if the number exceeds the Greek alphabet, the remaining ſtars are marked by letters of the Roman alphabet, which letters are preſerved by Flamſteed, and by Senex on his globes. The celebrated Hevelius compoſed a catalogue of 1888 ſtars, 1553 of which were obſerved by himſelf; and their places were computed for the year 1660.

The laſt and greateſt is the Britannic catalogue, compiled from the obſervations of the accurate Mr Flamſteed; who for a long ſeries of years devoted himſelf wholly thereto. As there was nothing wanting either in the obſerver or apparatus, we may look on this as a perfect work ſo far as it goes. It is to be regretted the impreſſion had not paſſed through his own hands: that now extant was publiſhed by authority, but without the author's conſent: it contains 2734 ſtars. There was another publiſhed in 1725, purſuant to his teſtament; containing no leſs than 3000 ſtars, with their places rectified for the year 1689: to which is added Mr Sharp's catalogue of the ſouthern ſtars not viſible in our hemiſphere, adapted to the year 1726.

The firſt catalogue, we believe, that was printed in the new or ſecond form, according to the order of the right aſcenſions, is that of De la Caille, given in his Ephemerides for the ten years between 1755 and 1765, and printed in 1755. It contains the right aſcenſions and declinations of 307 ſtars, adapted to the beginning of the year 1750. In 1757 De la Caille publiſhed his *Aſtronomiæ Fundamenta*, containing a catalogue of the right aſcenſions and declinations of 398 ſtars, likewiſe adapted to the beginning of 1750. And in 1763, the year after his death, was publiſhed the *Cœlum Auſtrale Stelliferum* of the ſame author; containing a catalogue of the places of 1942 ſtars, all ſituated to the ſouthward of the tropic of Capricorn, and obſerved by him while he was at the Cape of Good Hope in 1751 and 1752; their places being alſo adapted to the beginning of 1750. In the ſame year was publiſhed his Ephemerides for the ten years between 1765 and 1775; in the introduction to which are given the places of 515 zodiacal ſtars, all deduced from the obſervations of the ſame author; the places adapted to the beginning of the year 1765.

In the Nautical Almanac for 1773, is given a catalogue of 387 ſtars, in right aſcenſion, declination, longitude and latitude, derived from the obſervations of the late celebrated Dr Bradley, and adjuſted to the beginning of the year 1760. This ſmall catalogue, and the reſults of about 1200 obſervations of the moon, are all that the public have yet ſeen of the multiplied labours of this moſt accurate and indefatigable obſerver, although he has now (1798) been dead upwards of 36 years.

In 1775 was publiſhed a thin volume, entitled, *Opera Inedita*, containing ſeveral papers of the late Tobias Mayer, and among them a catalogue of the right aſcenſions and declinations of 998 ſtars, which may be occulted by the moon and planets; the places being adapted to the beginning of the year 1756. Catalogue of the Stars

At the end of the firſt volume of "Aſtronomical Obſervations made at the Royal Obſervatory at Greenwich," publiſhed in 1776, Dr Maſkelyne, the preſent aſtronomer royal, has given a catalogue of the places of 34 principal ſtars, in right aſcenſion and north polar diſtance, adapted to the beginning of the year 1770.

Theſe being the reſult of ſeveral years repeated obſervations, made with the utmoſt care, and the beſt inſtruments, it may be preſumed are exceedingly accurate.

In 1782, M. Bode of Berlin publiſhed a very extenſive catalogue of 5058 of the fixed ſtars, collected from the obſervations of Flamſteed, Bradley, Hevelius, Mayer, De la Caille, Meſſier, Monnier, D'Arquier, and other aſtronomers; all adapted to the beginning of the year 1780; and accompanied with a celeſtial atlas or ſet of maps of the conſtellations, engraved in a moſt delicate and beautiful manner.

To theſe may be added Dr Herſchel's catalogue of double ſtars, printed in the Phil. Tranſ. for 1782 and 1783; Meſſier's nebulæ and cluſters of ſtars, publiſhed in the *Connoiſſance des Temps* for 1784; and Herſchel's catalogue of the ſame kind, given in the Phil. Tranſ. for 1786.

In 1789 Mr Francis Wollaſton publiſhed "A Specimen of a General Aſtronomical Catalogue, in Zones of North-polar Diſtance, and adapted to January 1. 1790." Theſe ſtars are collected from all the catalogues before-mentioned, from that of Hevelius downwards. This work contains five diſtinct catalogues; viz. Dr Maſkelyne's new catalogue of 36 principal ſtars; a general catalogue of all the ſtars, in zones of north polar diſtance; an index to the general catalogue; a catalogue of all the ſtars in the order in which they paſs the meridian; and a catalogue of zodiacal ſtars, in longitude and latitude.

Finally, in 1792, Dr Zach publiſhed at Gotha, *Tabulæ Motuum Solis*; to which is annexed a new catalogue of the principal fixed ſtars, from his own obſervations made in the years 1787, 1788, 1789, 1790. This catalogue contains the right aſcenſions and declinations of 381 principal ſtars, adapted to the beginning of the year 1800. *Hutton's Math. Dict.*

Beſides theſe two methods of forming *catalogues* of the ſtars, Dr Herſchel has propoſed a new one, in which the comparative brightneſs of the ſtars is accurately expreſſed. It is long ſince aſtronomers were firſt led to arrange the ſtars in claſſes of different magnitudes by their various degrees of brilliancy or luſtre. Brightneſs and ſize have at all times been conſidered as ſynonymous terms; ſo that the brighteſt ſtars have been referred to the claſs comprehending thoſe of the firſt magnitude; and as the ſubſequent orders of ſtars have been ſuppoſed to decreaſe in luſtre, their magnitude has been determined in the ſame decreaſing progreſſion: but the want of ſome fixed and ſatisfactory ſtandard of luſtre has been the ſource of conſiderable confuſion and uncertainty in ſettling the relative magnitudes of the ſtars. A ſtar marked 1. 2m. is ſuppoſed to be between the firſt and ſecond magnitude; but 2. 1m. intimates, that the ſtar is nearly of the ſecond magnitude,

Catalogue of the Stars.

magnitude, and that it partakes ſomewhat of the luſtre of a ſtar of the firſt order. Such ſubdiviſions may be of ſome uſe in aſcertaining ſtars of the firſt, ſecond, and third claſſes; but the expreſſions 5m, 5.6m, 6.5m, 6m, muſt be very vague and indefinite. Dr Herſchel obſerves that he has found them ſo in fact; and he therefore conſiders this method of pointing out the different luſtre of ſtars as a reference to an imaginary ſtandard. If any dependence could be placed on this method of magnitudes, "it would follow, that no leſs than 11 ſtars in the conſtellation of the Lion, namely β, σ, π, ξ, A, *b*, *c*, *d*, 54, 48, 72, had all undergone a change in their luſtre ſince Flamſteed's time: For if the idea of magnitudes had been a clear one, our author, who marked β 1.2m. and γ 2m. ought to be underſtood to mean that β is larger than γ; but we now find that actually γ is larger than β. Every one of the eleven ſtars (ſays Dr Herſchel) which I have pointed out may be reduced to the ſame contradiction."

The author has pointed out the inſtances of the inſufficiency of this method, and of the uncertain concluſions that are deduced from it, in determining the comparative brightneſs of ſtars found not only in Mr Flamſteed's catalogue, but alſo in the catalogues of other aſtronomers. It is ſufficiently apparent that the preſent method of expreſſing the brightneſs of the ſtars is very defective. Dr Herſchel therefore propoſes a different mode, that is more preciſe and ſatisfactory.

"I place each ſtar (he ſays), inſtead of giving its magnitude, into a ſhort ſeries, conſtructed upon the order of brightneſs of the neareſt proper ſtars. For inſtance, to expreſs the luſtre of D, I ſay CDE. By this ſhort notation, inſtead of referring the ſtar D to an imaginary uncertain ſtandard, I refer it to a preciſe and determined exiſting one. C is a ſtar that has a greater luſtre than D, and E is another of leſs brightneſs than D. Both C and E are neighbouring ſtars, choſen in ſuch a manner that I may ſee them at the ſame time with D, and therefore may be able to compare them properly. The luſtre of C is in the ſame manner aſcertained by BCD; that of B by ABC; and alſo the brightneſs of E by DEF; and that of F by EFG.

"That this is the moſt natural, as well as the moſt effectual way to expreſs the brightneſs of a ſtar, and by that means to detect any change that may happen in its luſtre, will appear, when we conſider what is requiſite to aſcertain ſuch a change. We can certainly not wiſh for a more deciſive evidence, than to be aſſured, by actual inſpection, that a certain ſtar is now no longer more or leſs bright than ſuch other ſtars to which it has been formerly compared; provided we are at the ſame time aſſured that thoſe other ſtars remain ſtill in their former unaltered luſtre. But if the ſtar D will no longer ſtand in its former order CDE, it muſt have undergone a change; and if that order is now to be expreſſed by CED, the ſtar has loſt ſome part of its luſtre; if, on the contrary, it ought now to be denoted by DCE, its brightneſs muſt have had ſome addition. Then, if we ſhould doubt the ſtability of C and E, we have recourſe to the orders BCD and DEF, which expreſs their luſtre; or even to ABC and EFG, which continue the ſeries both ways. Now having before us the ſeries BCDEF, or if neceſſary even the more extended one ABCDEFG, it will be impoſſible to miſtake a change of brightneſs in D, when every member of the ſeries is found in its proper order except D."

Catalogue of the Stars.

In the author's journal or catalogue, in which the order of the luſtre of the ſtars is fixed, each ſtar bears its own proper name or number, *e.g.* "the brightneſs of the ſtar δ Leonis may be expreſſed by $\beta\,\delta\,\varepsilon$ Leonis, or better by 94—68—17 Leonis; theſe being the numbers which the three above ſtars bear in the Britiſh catalogue of fixed ſtars."

This method of arrangement occurred to Dr Herſchel ſo early as the year 1782; but he was diverted from the regular purſuit of it by a variety of other aſtronomical engagements. After many trials, he propoſed, in the Tranſactions of the Royal Society of London for 1796, the plan which appeared to him the moſt eligible. It is as follows:—Inſtead of denoting particular ſtars by letters, he makes uſe of numbers; and in his choice of the ſtars which are to expreſs the luſtre of any particular one, he directs his firſt view to perfect equality. When two ſtars ſeem to be ſimilar both in brightneſs and magnitude, he puts down their numbers together, ſeparated merely by a point, as 30.24 Leonis; but if two ſtars, which at firſt ſeemed alike in their luſtre, appeared on a longer inſpection to be different, and the preference ſhould be always decidedly in favour of the ſame ſtar, he ſeparates theſe ſtars by a comma, thus, 41,94 Leonis. This order muſt not be varied; nor can three ſuch ſtars, as 20, 40, 39, Libræ, admit of a different arrangement. If the ſtate of the heavens ſhould be ſuch as to require a different order in theſe numbers, we may certainly infer that a change has taken place in the luſtre of one or more of them. When two ſtars differ very little in brightneſs, but ſo that the preference of the one to the other is indiſputable, the numbers that expreſs them are ſeparated by a ſhort line, as —17—70 Leonis, or 68—17—70 Leonis. When two ſtars differ ſo much in brightneſs, that one or two other ſtars might be interpoſed between them, and ſtill leave ſufficient room for diſtinction, they are diſtinguiſhed by a line and comma, thus, —, or by two lines, as 32——41 Leonis. A greater difference than this is denoted by a broken line, thus ———29 Bootis. On the whole, the author obſerves the marks and diſtinctions which he has adopted cannot poſſibly be miſtaken; "a point denoting equality of luſtre; a comma indicating the leaſt perceptible difference; a ſhort line to mark a decided but ſmall ſuperiority; a line and comma, or double line, to expreſs a conſiderable and ſtriking exceſs of brightneſs; and a broken line to mark any other ſuperiority which is to be looked upon as of no uſe in eſtimations that are intended for the purpoſe of directing changes."

The difficulties that attend this arrangement are not diſguiſed; but the importance and utility of it more than compenſate for the labour which it muſt neceſſarily require. By a method of this kind, many diſcoveries of changeable and periodical ſtars might probably have been made, which have eſcaped the moſt diligent and accurate obſervers. We might then, as the author ſuggeſts, be enabled to reſolve a problem in which we are all immediately concerned.

"Who, for inſtance, would not wiſh to know what degree of permanency we ought to aſcribe to the luſtre of our ſun? Not only the ſtability of our climates, but the

Catalogue of the Stars.

the very exiſtence of the whole animal and vegetable creation itſelf, is involved in the queſtion. Where can we hope to receive information upon this ſubject but from aſtronomical obſervations? If it be allowed to admit the ſimilarity of ſtars with our ſun as a point eſtabliſhed, how neceſſary will it be to take notice of the fate of our neighbouring *ſuns*, in order to gueſs at that of our own! That *ſtar*, which among the multitude we have dignified by the name of *ſun*, to-morrow may ſlowly begin to undergo a gradual decay of brightneſs, like β Leonis, α Ceti, α Draconis, δ Urſæ majoris, and many other diminiſhing ſtars that will be mentioned in my catalogues. It may ſuddenly increaſe, like the wonderful ſtar in the back of Caſſiopeia's chair, and the no leſs remarkable one in the foot of Serpentarius; or gradually come on, like β Geminorum, β Ceti, ζ Sagittarii, and many other increaſing ſtars, for which I alſo refer to my catalogues; and, laſtly, it may turn into a periodical one of 25 days duration, as Algol is one of three days, δ Cephei of five, β Lyræ of ſix, η Antinoi of ſeven days, and as many others as are of various periods."

Having thus explained the general principle on which this catalogue is formed, as we find it in the author's firſt memoir on the ſubject, we muſt refer the reader to the doctor's own account for its particular arrangement, obſerving only that the catalogue ſubjoined comprehends nine conſtellations, which are arranged in alphabetical order, with the comparative brightneſs of the ſtars accurately ſtated. In a ſubſequent paper, publiſhed in the ſame volume, he has completely verified the utility of his method by experience, and ſhewn that there is no permanent change of luſtre in the ſtars. In the notes to his firſt catalogue he mentioned α Herculis as a periodical ſtar. By a ſeries of obſervations on this ſtar, compared with α Ophiuchi, which was moſt conveniently ſituated for his purpoſe, he has been able not only to confirm this opinion, but to aſcertain its period. His obſervations are arranged in a table, by means of which he determines that this ſtar had gone through four ſucceſſive changes in an interval of 241 days; and therefore the duration of its period muſt be about 60 days and a quarter. This fact concurs with other circumſtances in evincing the rotatory motion of the ſtars on their axes. "Dark ſpots, or large portions of the ſurface leſs luminous than the reſt, turned alternately in certain directions, either towards or from us, will account for the phenomena of periodical changes in the luſtre of the ſtars, ſo ſatisfactorily, that we certainly need not look out for any other cauſe." If it be alleged that the periods in the change of luſtre of ſome ſtars, ſuch as Algol, β Lyræ, δ Cephei, and η Antinoi, are ſhort, being only 3, 5, 6, and 7 days reſpectively; while thoſe of ο Ceti, and of the changeable ſtar in Hydra, and that in the neck of the Swan, are long, amounting to 331, 394, and 497 days; and that we cannot aſcribe phenomena ſo different in their duration to the ſame cauſe—it may be anſwered to this objection, that the force of it is founded on our limited acquaintance with the ſtate of the heavens. To the 7 ſtars, the periodical changes of which were before known, we may now add α Herculis, which performs a revolution of its changes in 60 days.

"The ſtep from the rotation of α Herculis to that of ο Ceti is far leſs conſiderable than that from the period of Algol to the rotation of α Herculis; and thus a link in the chain is now ſupplied, which removes the objection that aroſe from the vacancy." The rotation of the fifth ſatellite of Saturn is proved by the change obſervable in its light; and "this variation of light, owing to the alternate expoſition of a more or leſs bright hemiſphere of this periodical ſatellite, plainly indicates, that the ſimilar phenomenon of a changeable ſtar ariſes from the various luſtre of the different parts of its ſurface, ſucceſſively turned to us by its rotatory motion."

Beſides, we perceive a greater ſimilarity between the ſun and the ſtars, by means of the ſpots that muſt be admitted to exiſt on their ſurfaces, as well as on that of the ſun.

Dr Herſchel farther obſerves, that the ſtars, beſides a rotatory motion on their axes, may have other movements; "ſuch as nutations or changes in the inclination of their axes; which, added to bodies much flattened by quick rotatory motions, or ſurrounded by rings like Saturn, will eaſily account for many new phenomena that then offer themſelves to our extended views."

Catalonia || Catana.

CATALONIA, a province of Spain, bounded on the north by the Pyrenean mountains, which divide it from France; by the kingdom of Arragon and Valencia on the weſt; and by the Mediterranean ſea on the ſouth and eaſt. It is 155 miles in length, and 100 in breadth. It is watered by a great number of rivers; the principal of which are the Lobregat, the Ter, and the Segra. The air is temperate and healthy; but the land is mountainous, except in a few places. It produces, however, corn, wine, oil, pulſe, flax, and hemp, ſufficient for the inhabitants. The mountains are covered with large foreſts of tall trees, ſuch as the oak, the ever-green oak, the beech, the pine, the fir, the cheſnut, and many others; with cork trees, ſhrubs, and medicinal plants. There are ſeveral quarries of marble of all colours, cryſtal, alabaſter, amethyſts, and lapis lazuli. Gold duſt has been found among the ſands of one or two of the rivers; and there are mines of tin, iron, lead, alum, vitriol, and ſalt. They likewiſe fiſh for coral on the eaſtern coaſt. The inhabitants are hardy, courageous, active, vigorous, and good ſoldiers, but apt to be diſcontented. The miquelets are a ſort of ſoldiers which guard the paſſes over the mountains, and ought to protect travellers; but if they are not paid to their minds, they ſeldom fail to pay themſelves. The river Lobregat divides Catalonia into two parts, the eaſt and weſt, according to their ſituation. This province comprehends 17 vigueries or territories; two of which are in Rouſillon, and belong to the French. The reſt are ſubject to the Spaniards. The principal towns are Barcelona the capital, Tarragona, Tortoſa, Lerida, Solſonia, Cardona Vich, Girona, Seu d'Urgel, Pui Cerda, and Cervera. Catalonia was the laſt province in Spain which ſubmitted to Philip in the Succeſſion war.

CATAMENIA, in *Medicine*. See MENSES.

CATAMITE, a boy kept for Sodomitical practices.

CATANA, or CATINA, in *Ancient Geography*, a town of Sicily, ſituated oppoſite to Ætna, to the ſouth-eaſt; one of the five Roman colonies: anciently built by the people of Naxus ſeven years after the building of Syracuſe, 728 years before Chriſt. It was the country

Catanea.

of Charondas the famous lawgiver. The town is ſtill called *Catanea*. See *Catanea*.

Catananche, Catanea.

CATANANCHE, Candia lions foot. See Botany *Index*.

CATANEA, or Catania, a city of Sicily, ſeated on a gulf of the ſame name, near the foot of Mount Ætna, or Gibel. It was founded by the Chalcidians ſoon after the ſettlement of Syracuſe, and enjoyed great tranquillity till Hiero I. expelled the whole body of citizens; and after repleniſhing the town with a new ſtock of inhabitants, gave it the name of *Ætna*: immediately after his deceaſe, it regained its ancient name, and its citizens returned to their abodes. Catania fell into the hands of the Romans, among their earlieſt acquiſitions in Sicily, and became the reſidence of a prætor. To make it worthy of ſuch an honour, it was adorned with ſumptuous buildings of all kinds, and every convenience was procured to ſupply the natural and artificial wants of life. It was deſtroyed by Pompey's ſon, but reſtored with ſuperior magnificence by Auguſtus. The reign of Decius is famous in the hiſtory of this city, for the martyrdom of its patroneſs St Agatha. On every emergency her interceſſion is implored. She is piouſly believed to have preſerved Catanea from being overwhelmed by torrents of lava, or ſhaken to pieces by earthquakes; yet its ancient edifices are covered by repeated ſtreams of volcanic matter; and almoſt every houſe, even her own church, has been thrown to the ground. In the reign of William the Good, 20,000 Catanians, with their paſtor at their head, were deſtroyed before the ſacred veil could be properly placed to check the flames. In the laſt century the eruptions and earthquakes raged with redoubled violence, and Catania was twice demoliſhed. See Ætna.

The preſent prince of Biſcari has been at infinite pains, and ſpent a large ſum of money, in working down to the ancient town, which, on account of the numerous torrents of lava that have flowed out of Mount Ætna for theſe laſt thouſand years, is now to be ſought for in dark caverns many feet below the preſent ſurface of the earth. Mr Swinburne informs us that he deſcended into baths, ſepulchres, an amphitheatre, and a theatre, all very much injured by the various cataſtrophes that have befallen them. They were erected upon old beds of lava, and even built with ſquare pieces of the ſame ſubſtance, which in no inſtance appears to have been fuſed by the contact of new lavas: The ſciarra or ſtones of cold lava, have conſtantly proved as ſtrong a barrier againſt the flowing torrent of fire as any other ſtone could have been, though ſome authors were of opinion that the hot matter would melt the old maſs and incorporate with it.

This city has been frequently defended from the burning ſtreams by the ſolid maſs of its own ramparts, and by the air compreſſed between them and the lava; as appears by the torrent having ſtopt within a ſmall diſtance of the walls, and taken another direction. But when the walls were broken or low, the lava collected itſelf till it roſe to a great height, and then poured over in a curve. A ſimilar inſtance is ſeen at the Torre del Greco near Naples, where the ſtream of liquid fire from Veſuvius divided itſelf into two branches, and left a church untouched in the middle. There is a well at the foot of the old walls of Catania, where the lava, after running along the parapet, and then falling forwards, has produced a very complete lofty arch over the ſpring.

Catanea || Cataphracta.

The church here is a noble fabric. It is accounted the largeſt in Sicily, though neither a porch nor cupola has been erected, from a doubt of the ſolidity of the foundations, which are no other than the bed of lava that ran out of Ætna in 1669, and is ſuppoſed to be full of cavities. The organ is much eſteemed by connoiſſeurs in muſical inſtruments.

Catania, according to Mr Swinburne's account, is reviving with great ſplendour. "It has already (he ſays) much more the features of a metropolis and royal reſidence than Palermo: the principal ſtreets are wide, ſtraight, and well paved with lava. An obeliſk of red granite, placed on the back of an antique elephant of touchſtone, ſtands in the centre of the great ſquare, which is formed by the townhall, ſeminary, and cathedral. The cathedral erected by the abbot Angerius in the year 1094, was endowed by Earl Roger with the territories of Catania and Ætna, for the ſmall acknowledgement of a glaſs of wine and a loaf of bread offered once a-year. It has ſuffered ſo much by earthquakes, that little of the original ſtructure remains, and the modern parts have hardly any thing except their materials to recommend them. The other religious edifices of the city are profuſely ornamented, but in a bad taſte. The ſpirit of building ſeems to have ſeized upon the people, and the prince of Biſcari's example adds freſh vigour. It were natural to ſuppoſe men would be backward in erecting new habitations, eſpecially with any degree of luxury, on ground ſo often ſhaken to its centre, and ſo often buried under the aſhes of a volcano; but ſuch is their attachment to their native ſoil, and their contempt of dangers they are habituated to, that they rebuild their houſes on the warm cinders of Veſuvius, the quaking plains of Calabria, and the black mountains of ſciarra at Catania; it is however ſurpriſing to ſee ſuch embelliſhments laviſhed in ſo dangerous a ſituation. There is a great deal of activity in the diſpoſition of this people: they know by tradition that their anceſtors carried on a flouriſhing commerce; and that before the fiery river filled it up, they had a ſpacious convenient harbour, where they now have ſcarce a creek for a felucca: they therefore wiſh to reſtore thoſe advantages to Catania, and have often applied to government for aſſiſtance towards forming a mole and port, an undertaking their ſtrength alone is unequal to; but whether the refuſal originates in the deficiencies of the public treaſury or the jealouſy of the other cities, all the projects have ended in fruitleſs applications. The number of inhabitants dwelling in Catania amounts to 30,000; the Catanians make it double: A conſiderable portion of this number appertains to the univerſity, the only one in the iſland, and the nurſery of all the lawyers." E. Long. 15. 19. N. Lat. 37. 30.

CATANZARO, a city in the kingdom of Naples, the capital of Calabria Ulterior, with a biſhop's ſee. It is the uſual reſidence of the governor of the province, and is ſeated on a mountain, in E. Long. 18. 20. N. Lat. 28. 58.

CATAPHONICS, the ſcience which conſiders the properties of reflected ſounds. See Acoustics.

CATAPHORA, in *Medicine*, the ſame as Coma.

CATAPHRACTA,

Cataphractæ Naves || Cataplasma.

CATAPHRACTA, (from κατὰ, and φράσσω, *I fortify* or *arm*), in the ancient military art, a piece of heavy defenſive armour, formed of cloth or leather, fortified with iron ſcales, or links wherewith ſometimes only the breaſt, ſometimes the whole body, and ſometimes the horſe too, was covered. It was in uſe among the Sarmatians, Perſians, and other barbarians. The Romans alſo adopted it early for their foot; and, according to Vegetius, kept to it till the time of Gratian, when the military diſcipline growing remiſs, and field exerciſes and labour diſcontinued, the Roman foot thought the cataphracta as well as the helmet too great a load to bear, and therefore threw both by, chooſing rather to march againſt the enemy bare-breaſted; by which, in the war with the Goths, multitudes were deſtroyed.

Cataphractæ Naves, ſhips armed and covered in fight, ſo that they could not be eaſily damaged by the enemy. They were covered over with boards or planks, on which the ſoldiers were placed to defend them; the rowers ſitting underneath, thus ſcreened from the enemy's weapons.

CATAPHRACTUS, denotes a thing defended or covered on all ſides with armour.

Cataphractus, or *Cataphractarius*, more particularly denotes a horſeman, or even horſe, armed with a cataphracta. The *cataphracti equites* were a ſort of cuiraſſiers, not only fortified with armour themſelves, but having their horſes guarded with ſolid plates of braſs or other metals, uſually lined with ſkins, and wrought into plumes or other forms. Their uſe was to bear down all before them, to break in upon the enemy's ranks, and ſpread terror and havock wherever they came, as being themſelves invulnerable and ſecure from danger. But their diſadvantage was their unwieldineſs, by which, if once unhorſed or on the ground, they were unable to riſe, and thus fell a prey to the enemy.

CATAPHRYGIANS, a ſect in the ſecond century, ſo called as being of the country of Phrygia. They were orthodox in every thing, ſetting aſide this, that they took Montanus for a prophet, and Priſcilla and Maximilla for true propheteſſes, to be conſulted in every thing relating to religion; as ſuppoſing the Holy Spirit had abandoned the church. See Montanist.

CATAPLASMA, a poultice; from κατὰπλασσω, *illino*, to ſpread like a plaſter. Cataplaſms take their name ſometimes from the part to which they are applied, or effects they produce; ſo are called *anacollema*, *frontale*, *epicarpium*, *epiſpaſticum*, *veſicatorium*; and when muſtard is an ingredient, they are called *ſinapiſms*.

Theſe kinds of applications are ſofter and more eaſy than plaſters or ointments. They are formed of ſome vegetable ſubſtances, and applied of ſuch a conſiſtence as neither to adhere nor run: they are alſo more uſeful when the intention is effected by the perpetuity of the heat or cold which they contain, for they retain them longer than any other kind of compoſition.

When deſigned to *relax*, or to promote ſuppuration, they ſhould be applied warm. Their warmth, moiſture, and the obſtruction they give to perſpiration, is the method of their anſwering that end. The proper heat, when applied warm, is no more than to promote a kindly pleaſant ſenſation; for great heat prevents the deſign for which they are uſed. They ſhould be renewed as often as they cool. For relaxing and ſuppurating, none excel the white bread poultice, made with the crumb of an old loaf, a ſufficient quantity of milk to boil the bread in until it is ſoft, and a little oil; which laſt ingredient, beſides preventing the poultice from drying and ſticking to the ſkin, alſo retains the heat longer than the bread and milk alone would do. To preſerve the heat longer, the poultice, when applied, may be covered with a ſtrong ox's bladder. Catapulta.

When deſigned to *repel*, they ſhould be applied cold, and ought to be renewed as oft as they become warm. A proper compoſition for this end is a mixture of oatmeal and vinegar.

CATAPULTA, in antiquity, a military engine contrived for the throwing of arrows, darts, and ſtones upon the enemy.—Some of theſe engines were of ſuch force that they would throw ſtones of an hundred weight. Joſephus takes notice of the ſurpriſing effects of theſe engines, and ſays, that the ſtones thrown out of them beat down the battlements, knocked off the angles of the towers, and would level a whole file of men from one end to the other, was the phalanx ever ſo deep. This was called the

Battering Catapulta, and is repreſented on Plate CXXXV. This catapulta is ſuppoſed to carry a ſtone, &c. of an hundred weight; and therefore a deſcription of it will be ſufficient to explain the doctrine of all the reſt; for ſuch as threw ſtones of 500 and upwards were conſtructed, on the ſame principles.

The baſe is compoſed of two large beams 2, 3. The length of theſe beams is fifteen diameters of the bore of the capitals 9. At the two extremities of each beam, two double mortiſes are cut to receive the eight tenons of two croſs beams, each of them four of the diameters in length. In the centre of each of the beams of the baſe, and near two-thirds of their length, a hole, perfectly round, and 16 inches in diameter, ſhould be bored; theſe holes muſt be exactly oppoſite to each other, and ſhould increaſe gradually to the inſide of the beams, ſo that each of them, being 16 inches on the outſide towards the capitals 9, ſhould be $17\frac{1}{2}$ at the opening on the inſide, and the edges carefully rounded off. The capitals 9 are, in a manner, the ſoul of the machine, and ſerve to twiſt and ſtrain the cordage, which forms its principle or power of motion.

The capitals are either of caſt braſs or iron; each conſiſting of a wheel with teeth, C 10, of $2\frac{1}{2}$ inches thick. The hollow or bore of theſe wheels ſhould be $11\frac{1}{4}$ inches in diameter, perfectly round, and the edges ſmoothed down. As the friction would be too great if the capitals rubbed againſt the beams by the extreme ſtraining of the cordage, which draws them towards theſe beams, that inconvenience is remedied by the means of eight friction wheels, or cylinders of braſs, about the 13th of an inch in diameter, and an inch and one ſixth in length, placed circularly, and turning upon axes, as repreſented at D 13, B 12. One of theſe friction wheels at large with its ſcrew, by which it is faſtened into the beam, is repreſented at A.

Upon this number of cylindrical wheels the capitals 9 muſt be placed in the beams 2, 3, ſo that the cylin-

Catapulta. ders do not extend to the teeth of the wheels, which muſt receive a ſtrong pinion 14. By means of this pinion the wheel of the capital is made to turn for ſtraining the cordage with the key 15. The capital wheel has a ſtrong catch 16, and another of the ſame kind may be added, to prevent any thing from giving way through the extreme and violent force of the ſtrained cordage.

The capital piece of the machine is a nut or croſs pin of iron, 17, ſeen at C, and hammered cold into its form. It divides the bore of the capitals exactly in two equal parts, and fixed in grooves about an inch deep. This piece, or nut, ought to be about two inches and one third thick at the top 18, as repreſented in the ſection at B; and rounded off and poliſhed as much as poſſible, that the cords folded over it may not be hurt or cut by the roughneſs or edges of the iron. Its height ought to be eight inches, decreaſing gradually in thickneſs to the bottom, where it ought to be only one inch. It muſt be very exactly inſerted in the capitals.

After placing the two capitals in the holes of the two beams in a right line with each other, and fixing the two croſs diametrical nuts or pieces over which the cordage is to wind, one end of the cord is reeved through a hole in one of the capitals in the baſe, and made faſt to a nail withinſide of the beam. The other ſide of the cord is then carried through the hole in the oppoſite beam and capital, and ſo wound over the croſs pieces of iron in the centre of the two capitals, till they are full, the cordage forming a large ſkain. The tenſion or ſtraining of the cordage ought to be exactly equal, that is, the ſeveral foldings of the cord over the capital pieces ſhould be equally ſtrained, and ſo near each other as not to leave the leaſt ſpace between them. As ſoon as the firſt folding or ſkain of cord has filled up one whole ſpace or breadth of the capital pieces, another muſt be carried over it; and ſo on, always equally ſtraining the end till no more will paſs through the capitals, and the ſkain of cordage entirely fills them, obſerving to rub it from time to time with ſoap.

At three or four inches behind the cordage, thus wound over the capital pieces, two very ſtrong upright beams 21 are raiſed: theſe are poſts of oak 14 inches thick, croſſed over at top by another of the ſame ſolidity. The height of the upright beams is $7\frac{1}{2}$ diameters; each ſupported behind with very ſtrong props 25, fixed at bottom in the extremities of the baſe 2, 3. The croſs beam 24 is ſupported in the ſame manner by a prop in the centre.

The tree, arm, or ſtylus 22, ſhould be of ſound aſh. Its length is from 15 to 16 diameters of the bore of the capitals. The end at the bottom, or that fixed in the middle of the ſkain, is 10 inches thick, and 14 broad. To ſtrengthen the arm or tree, it ſhould be wrapped round with a cloth dipped in ſtrong glue like the tree of a ſaddle, and bound very hard with waxed thread of the ſixth of an inch in diameter, from the large end at bottom, almoſt to the top, as repreſented in the figure.

At the top of the arm, juſt under the iron hand or receiver 27, a ſtrong cord is faſtened, with two loops twiſted one within another, for the greater ſtrength. Into theſe two loops the hook of a braſs pulley 28 is put. The cord 29 is then reeved through the pulley, and faſtened to the roll 30. The cock or trigger 31, which ſerves as a ſtay, is then brought to it, and made faſt by its hook to the extremity of the hand 27, in which the body to be diſcharged is placed. The pulley at the neck of the arm is then unhooked; and when the trigger is to let it off, a ſtroke muſt be given upon it with an iron bar or crow of about an inch in diameter; on which the arm flies up with a force almoſt equal to that of a modern mortar. The cuſhion or ſtomacher 23, placed exactly in the middle of the croſs beam 24, ſhould be covered with tanned ox hide, and ſtuffed with hair, the arm ſtriking againſt it with inconceivable force. It is to be obſerved, that the tree or arm 22 deſcribes an angle of 90 degrees, beginning at the cock, and ending at the ſtomacher or cuſhion. Catapulta || Cataractes.

Catapulta for Arrows, Spears, or Darts. Some of the ſpears, &c. thrown by theſe engines, are ſaid to have been 18 feet long, and to have been thrown with ſuch velocity as to take fire in their courſe.

ABCD is the frame that holds the darts or arrows, which may be of different numbers, and placed in different directions. EF is a large and ſtrong iron ſpring, which is bent by a rope that goes over three pulleys, I, K, L; and is drawn by one or ſeveral men; this rope may be faſtened to a pin at M. The rope, therefore, being ſet at liberty, the ſpring muſt ſtrike the darts with great violence, and ſend them, with ſurpriſing velocity, to a great diſtance. This inſtrument differs in ſome particulars from the deſcription we have of that of the ancients; principally in the throwing of ſeveral darts at the ſame time, one only being thrown by theirs. Fig. 2.

CATARACT, in *Hydrography*, a precipice in the channel of a river, cauſed by rocks, or other obſtacles, ſtopping the courſe of the ſtream, from whence the water falls with greater noiſe and impetuoſity. The word comes from καταῤῥασσω, "I tumble down with violence;" compounded of κατα, "down," and ῥασσω, *dejicio*, "I throw down."—Such are the cataracts of the Nile, the Danube, Rhine, &c. In that of Niagara, the perpendicular fall of the water is 137 feet: and in that of Piſtil Rhaiadr, in North Wales, the fall of water is near 240 feet from the mountain to the lower pool.

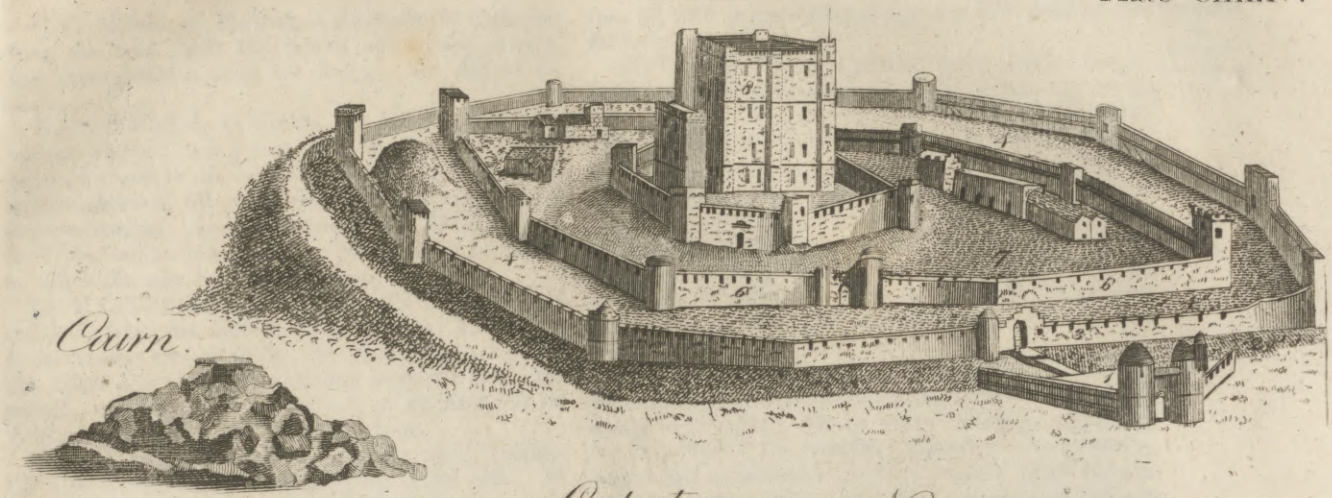
Strabo calls that a *cataract* which we call a *caſcade*; and what we call a *cataract*, the ancients uſually called a *catadupa*. Herminius has an expreſs diſſertation, "De admirandis mundi Cataractis ſupra et ſubterraneis;" where he uſes the word in a new ſenſe; ſignifying, by cataract, any violent motion of the elements.

CATARACT, in *Medicine* and *Surgery*, a diſorder of the humours of the eye, by which the pupilla, that ought to appear tranſparent and black, looks opaque, blue, gray, brown, &c. by which viſion is variouſly impeded, or totally deſtroyed. See SURGERY.

CATARO, a town of Dalmatia, and capital of the territory of the ſame name, with a ſtrong caſtle, and a biſhop's ſee. It is ſubject to Venice, and is ſeated on a gulf of the ſame name. E. Long. 19. 19. N. Lat. 42. 25.

CATARACTES, the trivial name of a ſpecies of LARUS. See ORNITHOLOGY *Index*.

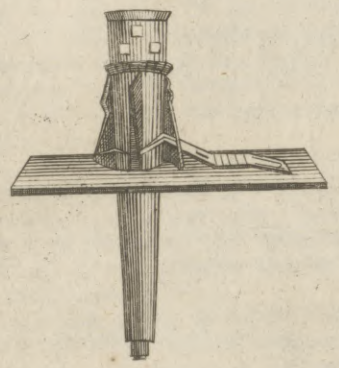
CATARRH,



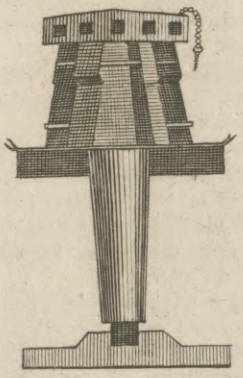
Cairn.

Capstern.

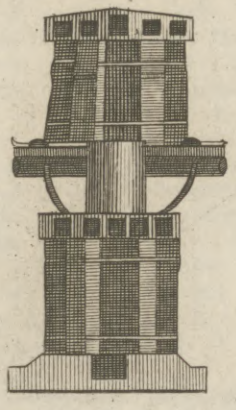
N.º 1.



N.º 2.



N.º 3.



N.º 4.

Catapulta.

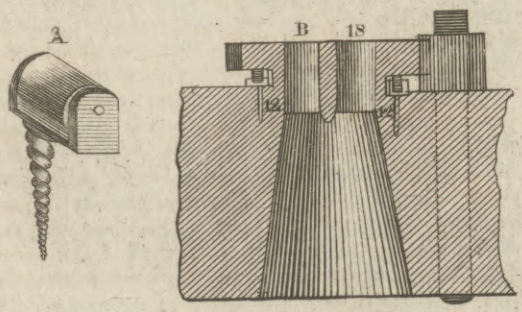
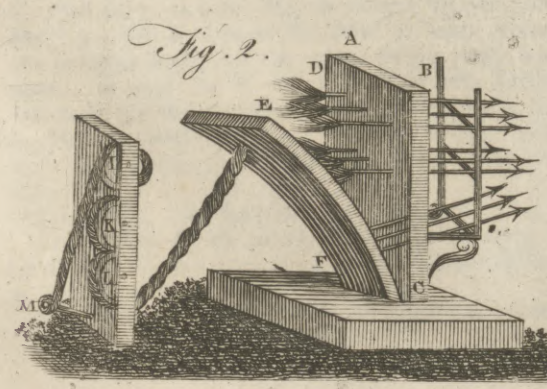
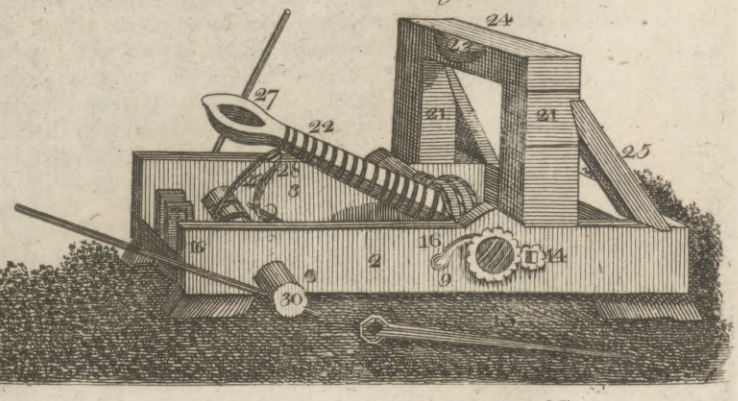


Fig. 1.

Fig. 2.





A. Bell Prin. Hall. Sculptor. fecit.

Catarrh || Catch-Wood.

CATARRH, in *Medicine*, a diſtillation or defluxion from the head upon the mouth and aſpera arteria, and through them upon the lungs. See MEDICINE *Index*.

CATASTASIS, in *Poetry*, the third part of the ancient drama; being that wherein the intrigue, or action, ſet forth in the epitaſis, is ſupported, carried on, and heightened, till it be ripe for the unravelling in the cataſtrophe. Scaliger defines it, the full growth of the fable, while things are at a ſtand in that confuſion to which the poet has brought them.

CATASTROPHE, in *Dramatic Poetry*, the fourth and laſt part in the ancient drama; or that immediately ſucceeding the cataſtaſis: or, according to others, the third only; the whole drama being divided into protaſis, epitaſis, and cataſtrophe; or in the terms of Ariſtotle, prologue, epilogue, and exode.

The cataſtrophe clears up every thing, and is nothing elſe but the diſcovery or winding-up of the plot. It has its peculiar place: for it ought entirely to be contained, not only in the laſt act, but in the very concluſion of it; and when the plot is finiſhed, the play ſhould be ſo alſo. The cataſtrophe ought to turn upon a ſingle point, or ſtart up on a ſudden.

The great art in the cataſtrophe is, that the clearing up of all difficulties may appear wonderful, and yet eaſy, ſimple, and natural.

It is a very prepoſterous artifice of ſome writers to ſhow the cataſtrophe in the very title of the play. Mr Dryden thinks that a cataſtrophe reſulting from a mere change in the ſentiments and reſolutions of a perſon, without any other machinery, may be ſo managed as to be exceedingly beautiful.

It is a diſpute among the critics, whether the cataſtrophe ſhould always fall out favourably on the ſide of virtue or not. The reaſons on the negative ſide ſeem the ſtrongeſt. Ariſtotle prefers a ſhocking cataſtrophe to a happy one.—The cataſtrophe is either ſimple or complex. The firſt is that in which there is no change in the ſtate of the principal perſons, nor any diſcovery or unravelling, the plot being only a mere paſſage out of agitation into quiet repoſe. In the ſecond, the principal perſons undergo a change of fortune, in the manner already defined.

CATCH, in the muſical ſenſe of the word, a fugue in the uniſon, wherein, to humour ſome conceit in the words, the melody is broken, and the ſenſe interrupted in one part, and caught again or ſupported by another; as in the catch in Shakeſpeare's play of the Twelfth Night, where there is a catch ſung by three perſons, in which the humour is, that each who ſings, calls and is called *knave* in turn: Or, as defined by Mr Jackſon "a catch is a piece for three or more voices, one of which leads, and the others follow in the ſame notes. It muſt be ſo contrived, that reſts (which are made for that purpoſe) in the muſic of one line be filled up with a word or two from another line; theſe form a croſs purpoſe, or catch, from whence the name."

CATCH-Fly. See LYCHNIS, BOTANY *Index*.

CATCH-Pole, (quaſi one that *catches* by the *pole*), a term uſed, by way of reproach, for the bailiff's follower or aſſiſtant.

CATCH-Word, among printers, that placed at the bottom of each page, being always the firſt word of the following page.

Catechesis || Catechu.

CATECHESIS, in a general ſenſe, denotes an inſtruction given any perſon in the firſt rudiments of an art or ſcience; but more particularly of the Chriſtian religion. In the ancient church, catechesis was an inſtruction given *viva voce*, either to children, or adult heathens, preparatory to their receiving of baptiſm. In this ſenſe, *catechesis* ſtands contradiſtinguiſhed from *myſtagogica*, which were a higher part of inſtruction given to thoſe already initiated, and containing the myſteries of faith. Thoſe who give ſuch inſtructions are called *catechiſts*; and thoſe who receive them, *catechumens*.

CATECHETIC, or CATECHETICAL, ſomething that relates to oral inſtruction in the rudiments of Chriſtianity.—Catechetic ſchools were buildings appointed for the office of the catechiſt, adjoining to the church, and called *catechumena*: ſuch was that in which Origen and many other famous men read catechetical lectures at Alexandria. See CATECHUMEN.

CATECHISM, in its primary ſenſe, an inſtruction, or inſtitution, in the principles of the Chriſtian religion, delivered *viva voce*, and ſo as to require frequent repetitions, from the diſciple or hearer, of what has been ſaid. The word is formed from κατηχεω, a compound of κατα and εχος, q. d. *circumſono*, alluding to the noiſe or din made in this ſort of exerciſe, or to the zeal and earneſtneſs wherewith things are to be inculcated over and over on the learners.—Anciently the candidates for baptiſm were only to be inſtructed in the ſecrets of their religion by tradition *viva voce*, without writing; as had alſo been the caſe among the Egyptian prieſts, and the Britiſh and Gauliſh druids, who only communicated the myſteries of their theology by word of mouth.

CATECHISM is more frequently uſed in modern times for an elementary book, wherein the principal articles of religion are ſummarily delivered in the way of queſtion and anſwer.

CATECHIST, (κατεχιστης, *catecheta*), he that catechiſes, i. e. he that inſtructs novices in the principles of religion.

CATECHIST more particularly denotes a perſon appointed by the church to inſtruct thoſe intended for baptiſm, by word of mouth, in the fundamental articles of the Chriſtian faith.—The catechiſts of churches were miniſters uſually diſtinct from the biſhops and preſbyters, and had their auditories or *catechumena* apart. Their buſineſs was to inſtruct the catechumens, and prepare them for the reception of baptiſm. But the catechiſts did not conſtitute any diſtinct order of the clergy, but were choſen out of any other order. The biſhop himſelf ſometimes performed the office; at other times preſbyters, or even readers or deacons, were the catechiſts. Origen ſeems to have had no higher degree in the church than reader, when he was made catechiſt at Alexandria, being only 18 years of age, and conſequently incapable of the deaconſhip.

CATECHU, in the *Materia Medica*, a name given to the extract otherwiſe known by the name of *Terra Japonica*, or Japan earth. See *ARECA* and *MIMOSA*.

CATECHUMEN,

Catechumen || Category.

CATECHUMEN, a candidate for baptiſm, or one who prepares himſelf for the receiving thereof.

The catechumens, in church hiſtory, were the loweſt order of Chriſtians in the primitive church. They had ſome title to the common name of Chriſtian, being a degree above pagans and heretics, though not conſummated by baptiſm. They were admitted to the ſtate of catechumens by the impoſition of hands, and the ſign of the croſs. The children of believing parents were admitted catechumens, as ſoon as ever they were capable of inſtruction: but at what age thoſe of heathen parents might be admitted, is not ſo clear. As to the time of their continuance in this ſtate, there were no general rules fixed about it; but the practice varied according to the difference of times and places, and the readineſs and proficiency of the catechumens themſelves.

There were four orders or degrees of catechumens; the firſt were thoſe inſtructed privately without the church, and kept at a diſtance, for ſome time, from the privilege of entering the church, to make them the more eager and deſirous of it. The next degree were the *audientes*, ſo called from their being admitted to hear ſermons, and the Scriptures read in the church, but were not allowed to partake of the prayers. The third ſort of catechumens were the *genu-flectentes*, ſo called becauſe they received impoſition of hands kneeling. The fourth order was the *competentes et electi*, denoting the immediate candidates for baptiſm, or ſuch as were appointed to be baptiſed the next approaching feſtival; before which, ſtrict examination was made into their proficiency under the ſeveral ſtages of catechetical exerciſes.

After examination, they were exerciſed for twenty days together, and were obliged to faſting and confeſſion: ſome days before baptiſm they went veiled; and it was cuſtomary to touch their ears, ſaying, *Ephatha*, i. e. Be opened; as alſo to anoint their eyes with clay; both ceremonies being in imitation of our Saviour's practice, and intended to ſhadow out to the catechumens their condition both before and after their admiſſion into the Chriſtian church.

CATEGORICAL, in a general ſenſe, is applied to thoſe things ranged under a CATEGORY.

CATEGORICAL alſo imports a thing to be abſolute, and not relative; in which ſenſe it ſtands oppoſed to *hypothetical*. We ſay, a *categorical* propoſition, a *categorical* ſyllogiſm, &c.

A *categorical* anſwer denotes an expreſs and pertinent anſwer made to any queſtion or objection propoſed.

CATEGORY, in *Logic*, a ſeries or order of all the predicates or attributes contained under any genus.

The ſchool philoſophers diſtribute all the objects of our thoughts and ideas into certain *genera* or claſſes, not ſo much, ſay they, to learn what they do not know, as to communicate a diſtinct notion of what they do know; and theſe claſſes the Greeks called *categories*, and the Latins *predicaments*.

Ariſtotle made ten categories, viz. quantity, quality, relation, action, paſſion, time, place, ſituation, and habit, which are uſually expreſſed by the following technical diſtich:

Arbor, ſex, ſervos, ardore, refrigerat, uſtos,
Rure cras ſtabo, nec tunicatus ero.

Catek || Caterpillar-Eaters.

CATEK. See BENGAL.

CATENARIA, in the higher geometry, the name of a curve line formed by a rope hanging freely from two points of ſuſpenſion, whether the points be horizontal or not. See FLUXIONS.

CATERPILLAAR, in *Zoology*, the name of all winged inſects when in their reptile or worm ſtate. See ENTOMOLOGY *Index*.

Method of Deſtroying CATERPILLARS *on Trees.*—Take a chafing diſh with lighted charcoal, and placing it under the branches that are loaded with caterpillars, throw ſome pinches of brimſtone upon the coals. The vapour of the ſulphur, which is mortal to theſe inſects, will not only deſtroy all that are on the tree, but prevent it from being infeſted with them afterwards. A pound of ſulphur will clear as many trees as grow on ſeveral acres. This method has been ſucceſsfully tried in France. In the *Journal Oeconomique*, the following is ſaid to be infallible againſt the caterpillars feeding on cabbage, and perhaps may be equally ſerviceable againſt thoſe that infeſt other vegetables. Sow with hemp all the borders of the ground where you mean to plant your cabbage; and, although the neighbourhood is infeſted with caterpillars, the ſpace encloſed by the hemp will be perfectly free, not one of the vermine will approach it.

Caterpillar-Eaters, a name given by ſome authors to a ſpecies of worms bred in the body of the caterpillar, and which eat its fleſh; theſe are owing to a certain kind of fly that lodges her eggs in the body of this animal, and they, after their proper changes, become flies like their parents.

M. Reaumur has given us, in his hiſtory of inſects, ſome very curious particulars in regard to theſe little worms. Every one of them, he obſerves, ſpins itſelf a very beautiful caſe of a cylindric figure, made of a very ſtrong ſort of ſilk; theſe are the caſes in which this animal ſpends its ſtate of chryſalis; and they have a mark by which they may be known from all other animal productions of this kind, which is, that they have always a broad ſtripe or band ſurrounding their middle, which is black when the reſt of the caſe is white, and white when that is black. M. Reaumur has had the pains and patience to find out the reaſon of this ſingularity, which is this: the whole ſhell is ſpun of a ſilk produced out of the creature's body; this at firſt runs all white, and towards the end of the ſpinning turns black. The outſide of the caſe muſt neceſſarily be formed firſt, as the creature works from within: conſequently this is truly white all over, but it is tranſparent, and ſhows the laſt ſpun or black ſilk through it. It might be ſuppoſed that the whole inſide of the ſhell ſhould be black; but this is not the caſe: the whole is faſhioned before this black ſilk comes; and this is employed by the creature, not to line the whole, but to fortify certain parts only; and therefore is all applied either to the middle, or to the two ends omitting the middle; and ſo gives either a black band in the middle, or a blackneſs at both ends, leaving the white in the middle to appear. It is not unfrequent

Caterva || Cathedral.

unfrequent to find a ſort of ſmall caſes, lying about garden walks, which move of themſelves; when theſe are opened, they are found to contain a ſmall living worm. This is one of the ſpecies of thoſe caterpillar-eaters; which, as ſoon as it comes out of the body of that animal, ſpins itſelf a caſe for its transformation long before that happens, and lives in it without food till that changes comes on; and it becomes a fly like that to which it owed its birth.

CATERVA, in ancient military writers, a term uſed in ſpeaking of the Gauliſh or Celtiberian armies, denoting a body of 6000 armed men. The word *caterva*, or *catervarius*, is alſo frequently uſed by ancient writers to denote a party or corps of ſoldiers in diſorder or diſarray; by which it ſtands diſtinguiſhed from cohort or turma, which were in good order.

CATESBÆA, the LILY THORN. See BOTANY *Index*.

CATHÆRETICS, in *Pharmacy*, medicines of a cauſtic nature, ſerving to eat off fungous fleſh.

CATHARINE. *Knights of St* CATHARINE *of Mount Sinai*, an ancient military order, erected for the aſſiſtance and protection of pilgrims going to pay their devotions to the body of St Catharine, a virgin of Alexandria, diſtinguiſhed for her learning, and ſaid to have ſuffered martyrdom under Maximin. The body of the myrtyr having been diſcovered on Mount Sinai, cauſed a great concourſe of pilgrims; and travelling being very dangerous, by reaſon of the Arabs, an order of knighthood was erected in 1063, on the model of that of the holy ſepulchre, and under the patronage of St Catharine; the knights of which obliged themſelves by oath to guard the body of the ſaint, keep the roads ſecure, obſerve the rule of St Baſil, and obey their grand maſter. Their habit was white, and on it were repreſented the inſtruments of martyrdom whereby the ſaint had ſuffered; viz. a half wheel armed with ſpikes, and traverſed with a ſword ſtained with blood.

CATHARINE. *Fraternity of St Catharine at Sienna*, a ſort of religious ſociety, inſtituted in that city in honour of St Catharine, a ſaint famous for her revelations, and for her marriage with Jeſus Chriſt, whoſe wedding ring is ſtill preſerved as a valuable relick. This fraternity yearly endows a certain number of deſtitute virgins, and has the privilege of redeeming annually two criminals condemned for murder, and the ſame number of debtors, by paying their debts.

CATHARTICS, in *Medicine*, remedies which promote evacuation by ſtool. See MATERIA MEDICA.

CATHEDRA, in a general ſenſe, a chair.—The word is more particularly uſed for a profeſſor's chair, and a preacher's pulpit.

CATHEDRA is alſo uſed for the biſhop's ſee, or throne in a church.

CATHEDRAL, a church wherein is a biſhop's ſee or ſeat: See CHURCH and BISHOP. The word comes from the Greek καθεδρα, "chair," of καθεζομαι, *ſedeo*, "I ſit." The denomination *cathedral* ſeems to have taken its riſe from the manner of ſitting in the ancient churches, or aſſemblies of primitive Chriſtians: in theſe, the council, i. e. the elders and prieſts, was called *Preſbyterium;* at their head was the biſhop, who held the place of chairman, *Cathedralis* or *Cathedraticus;* and the preſbyters, who ſat on either ſide, were alſo called by the ancient fathers, *Aſſeſſores Epiſcoporum*. The epiſcopal authority did not reſide in the biſhop alone; but in all the preſbyters, whereof the biſhop was preſident. A *cathedral*, therefore, originally, was different from what it is now; the Chriſtians, till the time of Conſtantine, having no liberty to build any temple: by their churches they only meant their aſſemblies; and by *cathedrals*, nothing more than conſiſtories. Catharine.

CATHERINE PARR. See PARR.

CATHERINE. I. *Empreſs of Ruſſia*, a moſt extraordinary perſonage, whoſe hiſtory deſerves to be given in detail. She was the natural daughter of a country girl; and was born at Ringen, a ſmall village upon the lake Virtcherve, near Dorpt, in Livonia. The year of her birth is uncertain; but, according to her own account, ſhe came into the world on the 5th of April 1687. Her original name was Martha, which ſhe changed for Catherine when ſhe embraced the Greek religion. Count Roſen, a lieutenant colonel in the Swediſh ſervice, who owned the village of Ringen, ſupported, according to the cuſtom of the country, both the mother and the child; and was, for that reaſon, ſuppoſed by many perſons to have been her father. She loſt her mother when ſhe was but three years old; and, as Count Roſen died about the ſame time, ſhe was left in ſo deſtitute a ſituation, that the pariſh clerk of the village received her into his houſe. Soon afterwards Gluck, Lutheran miniſter of Marienburgh, happening, in a journey through thoſe parts, to ſee the foundling, took her under his protection, brought her up in his family, and employed her in attending his children. In 1701, and about the 14th year of her age, ſhe eſpouſed a dragoon of the Swediſh garriſon of Marienburgh. Many different accounts are given of this tranſaction: one author of great credit affirms that the bride and bridegroom remained together eight days after their marriage; another, of no leſs authority, aſſerts, on the contrary, that on the morning of the nuptials her huſband being ſent with a detachment for Riga, the marriage was never conſummated. Thus much is certain, that the dragoon was abſent when Marienburgh ſurrendered to the Ruſſians; and Catherine, who was reſerved for a higher fortune, never ſaw him more.

General Bauer, upon the taking of Marienburgh, ſaw Catherine among the priſoners; and, being ſmitten with her youth and beauty, took her to his houſe, where ſhe ſuperintended his domeſtic affairs, and was ſuppoſed to be his miſtreſs. Soon afterwards ſhe was removed into the family of Prince Menzikof, who was no leſs ſtruck with the attractions of the fair captive. With him ſhe lived until 1704; when, in the 17th year of her age, ſhe became the miſtreſs of Peter the Great, and won ſo much upon his affections, that he eſpouſed her on the 29th of May 1711. The ceremony was ſecretly performed at Jawerof in Poland, in the preſence of General Bruce; and on the 20th of February 1712, it was publicly ſolemnized with great pomp at Peterſburgh.

Catherine, by the moſt unwearied aſſiduity and unremitted attention, by the ſoftneſs and complacency of her diſpoſition, but above all by an extraordinary livelineſs

Catherine. livelineſs and gaiety of temper, acquired a wonderful aſcendency over the mind of Peter. The latter was ſubject to occaſional horrors, which at times rendered him gloomy and ſuſpicious, and raiſed his paſſions to ſuch a height as to produce a temporary madneſs. In theſe dreadful moments Catherine was the only perſon who durſt venture to approach him; and ſuch was the kind of faſcination ſhe had acquired over his ſenſes, that her preſence had an inſtantaneous effect, and the firſt ſound of her voice compoſed his mind and calmed his agonies. From theſe circumſtances ſhe ſeemed neceſſary not only to his comfort, but even to his very exiſtence; ſhe became his inſeparable companion on his journeys to foreign countries, and even in all his military expeditions.

The peace of Pruth, by which the Ruſſian army was reſcued from certain deſtruction, has been wholly attributed to Catherine, though ſhe was little more than an inſtrument in procuring the conſent of Peter. The latter, in his campaign of 1711 againſt the Turks, having imprudently led his troops into a diſadvantageous ſituation, took the deſperate reſolution of cutting his way through the Turkiſh army in the night. With this reſolution he retired to his tent in an agony of deſpair, and gave poſitive orders that no one ſhould be admitted under pain of death. In this important juncture the principal officers and the vice chancellor Shaffirof aſſembled in the preſence of Catherine, and drew up certain preliminaries in order to obtain a truce from the grand vizier. In conſequence of this determination, plenipotentiaries were immediately deſpatched, without the knowledge of Peter, to the grand vizier, and a peace obtained upon more reaſonable conditions than could have been expected. With theſe conditions Catherine, notwithſtanding the orders iſſued by Peter, entered his tent, and prevailed upon him to ſign them. Catherine, by her conduct on this occaſion, acquired great popularity; and the emperor particularly ſpecifies her behaviour at Pruth as one of the reaſons which induced him to crown her publicly at Moſcow with his own hand. This ceremony was performed in 1724; and although deſigned by Peter only as a proof of his affection, was the principal cauſe of her ſubſequent elevation.

Her influence continued undiminiſhed until a ſhort time before the death of the emperor, when ſome circumſtances happened which occaſioned ſuch a coolneſs between them as would probably have ended in a total rupture, if his death had not fortunately intervened. The original cauſe of this miſunderſtanding aroſe from the following diſcovery of a ſecret connexion between Catherine and her firſt chamberlain, whoſe name was Mons. The emperor, who was ſuſpicious of this connexion, quitted Peterſburgh under pretence of removing to a villa for a few days, but privately returned to his winter palace in the capital. From thence he occaſionally ſent one of his confidential pages with a complimentary meſſage to the empreſs, as if he had been in the country, and with ſecret orders to obſerve her motions. From the page's information the emperor, on the third night, ſurpriſed Catherine in an arbour of the garden with her favourite Mons; while his ſiſter, Madame Balke, who was firſt lady of the bedchamber to the empreſs, was, in company with a page, upon the watch without the arbour.

Peter, whoſe violent temper was inflamed by this diſcovery, ſtruck Catherine with his cane, as well as the page, who endeavoured to prevent him from entering the arbour, and then retired without uttering a ſingle word either to Mons or his ſiſter. A few days after this tranſaction theſe perſons were taken into cuſtody, and Mons was carried to the winter palace, where no one had admiſſion to him but Peter, who himſelf brought him his proviſions. A report was at the ſame time circulated, that they were impriſoned for having received bribes, and making their influence over the empreſs ſubſervient to their own mercenary views. Mons being examined by Peter, in the preſence of Major-general Uſchakof, and threatened with the torture, confeſſed the corruption which was laid to his charge. He was beheaded; his ſiſter received five ſtrokes of the knout, and was baniſhed into Siberia; two of her ſons, who were chamberlains, were alſo degraded, and ſent as common ſoldiers among the Ruſſian troops in Perſia. On the day ſubſequent to the execution of the ſentence, Peter conveyed Catherine in an open carriage under the gallows, to which was nailed the head of Mons. The empreſs, without changing colour at this dreadful ſight, exclaimed, "What a pity it is that there is ſo much corruption among courtiers!" Catherine.

This event happened in the latter end of the year 1724; and as it was ſoon followed by Peter's death, and Catherine upon her acceſſion recalled Madame Balke, it has been ſuſpected that ſhe ſhortened the days of her huſband by poiſon. But notwithſtanding the critical ſituation for Catherine in which he died, and her ſubſequent elevation, this charge is totally deſtitute of the leaſt ſhadow of proof; for the circumſtances of Peter's diſorder were too well known, and the peculiar ſymptoms of his laſt illneſs ſufficiently account for his death, without the neceſſity of recurring to poiſon.

While Peter was yet lying in the agonies of death, ſeveral oppoſite parties were caballing to diſpoſe of the crown. At a conſiderable meeting of many among the principal nobility, it was ſecretly determined, on the moment of his diſſolution, to arreſt Catherine, and to place Peter Alexievitch upon the throne. Baſſevitz, appriſed of this reſolution, repaired in perſon to the empreſs, although it was already night. "My grief and conſternation," replied Catherine, "render me incapable of acting myſelf: do you and Prince Menzikof conſult together, and I will embrace the meaſures which you ſhall approve in my name." Baſſevitz, finding Menzikof aſleep, awakened and informed him of the preſſing danger which threatened the empreſs and her party. As no time remained for long deliberation, the prince inſtantly ſeized the treaſure, ſecured the fortreſs, gained the officers of the guards by bribes and promiſes, alſo a few of the nobility, and the principal clergy. Theſe partizans being convened in the palace, Catherine made her appearance; ſhe claimed the throne in right of her coronation at Moſcow; ſhe expoſed the ill effects of a minority; and promiſed, that, "ſo far from depriving the great duke of the crown, ſhe would receive it only as a ſacred depoſite, to be reſtored to him when ſhe ſhould be united, in another world, to an adored huſband, whom ſhe was now upon the point of loſing."

The

Catherine. The pathetic manner with which ſhe uttered this addreſs, and the tears which accompanied it, added to the previous diſtribution of large ſums of money and jewels, produced the deſired effect: at the cloſe of this meeting the remainder of the night was employed in making the neceſſary preparations to enſure her acceſſion in caſe of the emperor's death.

Peter at length expired on the morning of the 28th of January 1725. This event being made known, the ſenate, the generals, the principal nobility and clergy, haſtened to the palace to proclaim the new ſovereign. The adherents of the great duke ſeemed ſecure of ſucceſs, and the friends of Catherine were avoided as perſons doomed to deſtruction. At this juncture Baſſevitz whiſpered one of the oppoſite party, "The empreſs is miſtreſs of the treaſure and the fortreſs; ſhe has gained over the guards and the ſynod, and many of the chief nobility; even here ſhe has more followers than you imagine; adviſe therefore your friends to make no oppoſition as they value their heads." This information being rapidly circulated, Baſſevitz gave the appointed ſignal, and the two regiments of guards, who had been gained by a largeſs to declare for Catherine, and had already ſurrounded the palace, beat to arms. "Who has dared (exclaimed Prince Repnin, the commander in chief), to order out the troops without my knowledge?" "I, (returned General Butterlin), without pretending to diſpute your authority, in obedience to the commands of my moſt gracious miſtreſs." This ſhort reply was followed by a dead ſilence. In this moment of ſuſpenſe and anxiety Menzikof entered, preceding Catherine, ſupported by the duke of Holſtein. She attempted to ſpeak, but was prevented by ſighs and tears from giving utterance to her words: at length, recovering herſelf, "I come (ſhe ſaid), notwithſtanding the grief which now overwhelms me, to aſſure you, that, ſubmiſſive to the will of my departed huſband, whoſe memory will be ever dear to me, I am ready to devote my days to the painful occupations of government until Providence ſhall ſummon me to follow him." Then, after a ſhort pauſe, ſhe artfully added, "If the great duke will profit by my inſtructions, perhaps I ſhall have the conſolation, during my wretched widowhood, of forming for you an emperor worthy of the blood and the name of him whom you have now irretrievably loſt." "As this criſis (replied Menzikof) is a moment of ſuch importance to the good of the empire, and requires the moſt mature deliberation, your majeſty will permit us to confer, without reſtraint, that this whole affair may be tranſacted without reproach, as well in the opinion of the preſent age as in that of poſterity." "Acting as I do (anſwered Catharine), more for the public good than for my own advantage, I am not afraid to ſubmit all my concerns to the judgement of ſuch an enlightened aſſembly: you have not only my permiſſion to confer with freedom; but I lay my commands upon you all to deliberate maturely on this important ſubject, and I promiſe to adopt whatever may be the reſult of your deciſions." At the concluſion of theſe words the aſſembly retired into another apartment, and the doors were locked.

It was previouſly ſettled by Menzikof and his party that Catherine ſhould be empreſs; and the guards, who ſurrounded the palace with drums beating and colours flying, effectually vanquiſhed all oppoſition. Catherine. The only circumſtance, therefore, which remained, was to give a juſt colour to her title, by perſuading the aſſembly that Peter intended to have named her his ſucceſſor. For this purpoſe Menzikof demanded of that emperor's ſecretary, whether his late maſter had left any written declaration of his intentions? The ſecretary replied, "That a little before his laſt journey to Moſcow he had deſtroyed a will; and that he had frequently expreſſed his deſign of making another, but had always been prevented by the reflection, that if he thought his people whom he had raiſed from a ſtate of barbariſm to a high degree of power and glory, could be ungrateful, he would not expoſe his final inclinations to the inſult of a refuſal; and that if they recollected what they owed to his labours, they would regulate their conduct by his intentions, which he had diſcloſed with more ſolemnity than could be manifeſted by any writing. An altercation now began in the aſſembly; and ſome of the nobles having the courage to oppoſe the acceſſion of Cartharine, Theophanes archbiſhop of Pleſcoff called to their recollection the oath which they had all taken in 1722 to acknowledge the ſucceſſor appointed by Peter; and added, that the ſentiments of that emperor delivered by the ſecretary were in effect an appointment of Catherine. The oppoſite party, however, denied theſe ſentiments to be ſo clear as the ſecretary choſe to inſinuate; and inſiſted, that as their late monarch had failed to nominate his heir, the election of the new ſovereign ſhould revert to the ſtate. Upon this the archbiſhop farther teſtified, that the evening before the coronation of the empreſs at Moſcow, Peter had declared, in the houſe of an Engliſh merchant, that he ſhould place the crown upon her head with no other view than to leave her miſtreſs of the empire after his deceaſe. This atteſtation being confirmed by many perſons preſent, Menzikof cried out, "What need have we of any teſtament? A refuſal to conform to the inclination of our great ſovereign, thus authenticated, would be both unjuſt and criminal. Long live the empreſs Catherine!" Theſe words being inſtantaneouſly repeated by the greateſt part of thoſe who were preſent, Menzikof, ſaluting Catherine by the title of empreſs, paid his firſt obeiſance by kiſſing her hand; and his example was followed by the whole aſſembly. She next preſented herſelf at the window to the guards, and to the people, who ſhouted acclamations of "Long live Catherine!" while Menzikof ſcattered among them handfuls of money. Thus (ſays a contemporary) the empreſs was raiſed to the throne by the guards, in the ſame manner as the Roman emperors by the prætorian cohorts, without either the appointment of the people or of the legions.

The reign of Catharine may be conſidered as the reign of Menzikof, that empreſs having neither inclination or abilities to direct the helm of government; and ſhe placed the moſt implicit confidence in a man who had been the original author of her good fortune, and the ſole inſtrument of her elevation to the throne.

During her ſhort reign her life was very irregular; ſhe was extremely averſe to buſineſs; would frequently, when the weather was fine, paſs whole nights in the open air; and was particularly intemperate in the uſe

Catherine. of tokay wine. Theſe irregularities, joined to a cancer and a dropſy, haſtened her end; and ſhe expired on the 17th of May 1727, a little more than two years after her acceſſion to the throne, and in about the 40th year of her age.

As the deaths of ſovereigns in deſpotic countries are ſeldom imputed to natural cauſes, that of Catherine has alſo been attributed to poiſon; as if the diſorders which preyed upon her frame were not ſufficient to bring her to her grave. Some aſſert that ſhe was poiſoned in a glaſs of ſpirituous liquor; others by a pear given her by General Diever. Suſpicions alſo fell upon Prince Menzikof, who, a ſhort time before her deceaſe, had a trifling miſunderſtanding with her, and who was accuſed of haſtening her death, that he might reign with ſtill more abſolute power during the minority of Peter II. But theſe reports deſerve not the leaſt credit, and were merely dictated by the ſpirit of party, or by popular rumour.

Catherine was in her perſon under the middle ſize, and in her youth delicate and well formed, but inclined to corpulency as ſhe advanced in years. She had a fair complexion, dark eyes, and light hair, which ſhe was always accuſtomed to dye with a black colour. She could neither read nor write: her daughter Elizabeth uſually ſigned her name for her, and particularly to her laſt will and teſtament; and Count Oſterman generally put her ſignature to the public decrees and deſpatches. Her abilities have been greatly exaggerated by her panegyriſts. Gordon, who had frequently ſeen her, ſeems, of all writers to have repreſented her character with the greateſt juſtneſs, when he ſays, "She was a very pretty well-looked woman, of good ſenſe, but not of that ſublimity of wit, or rather that quickneſs of imagination, which ſome people have believed. The great reaſon why the czar was ſo fond of her, was her exceeding good temper; ſhe never was ſeen peeviſh or out of humour; obliging and civil to all, and never forgetful of her former condition: withal, mighty grateful." Catherine maintained the pomp of majeſty with an air of eaſe and grandeur united; and Peter uſed frequently to expreſs his admiration at the propriety with which ſhe ſupported her high ſtation, without forgetting that ſhe was not born to that dignity.

The following anecdotes will prove that ſhe bore her elevation meekly; and, as Gordon aſſerts, was never forgetful of her former condition. When Wurmb, who had been tutor to Gluck's children at the time that Catherine was a domeſtic in that clergyman's family, preſented himſelf before her after her marriage with Peter had been publicly ſolemnized, ſhe recollected and addreſſed him with great complacency, "What, thou good man, art thou ſtill alive! I will provide for thee." And ſhe accordingly ſettled upon him a penſion. She was no leſs attentive to the family of her benefactor Gluck, who died a priſoner at Moſcow: ſhe penſioned his widow; made his ſon a page; portioned the two eldeſt daughters; and advanced the youngeſt to be one of her maids of honour. If we may believe Weber, ſhe frequently inquired after her firſt huſband; and, when ſhe lived with Prince Menzikof, uſed ſecretly to ſend him ſmall ſums of money, until, in 1705, he was killed in a ſkirmiſh with the enemy.

But the moſt noble part of her character was her peculiar humanity and compaſſion for the unfortunate. Catherine. Motraye has paid a handſome tribute to this excellence. "She had, in ſome ſort, the government of all his (Peter's) paſſions; and even ſaved the lives of a great many more perſons than Le Fort was able to do: ſhe inſpired him with that humanity which, in the opinion of his ſubjects, nature ſeemed to have denied him. A word from her mouth in favour of a wretch, juſt going to be ſacrificed to his anger, would diſarm him; but if he was fully reſolved to ſatisfy that paſſion, he would give orders for the execution when ſhe was abſent, for fear ſhe ſhould plead for the victim." In a word, to uſe the expreſſion of the celebrated Munich, "*Elle etoit proprement la mediatrice entre le monarque et ſes ſujets.*"

CATHERINE II. empreſs of Ruſſia, whoſe original name was Sophia Auguſta Frederica, was the daughter of Chriſtian Auguſtus of Anhalt Zerbſt, a ſmall diſtrict in Upper Saxony, and was born in the caſtle of Zerbſt, on the 23d of May 1729. She was educated under the eye of her parents, along with her brother Prince Frederic Auguſtus, and at an early period diſplayed a maſculine ſpirit. Elegant, majeſtic, and handſome, in her perſon, her complexion exhibited the union of the lily and the roſe, while a native dignity was tempered by a ſmile of beneficence. But it was early obſerved, that ſhe concealed under this a certain auſterity of diſpoſition, and an ambition, which was even then conſidered as exceſſive, and proved afterwards to be inſatiable.

She ſoon learned all the faſhionable accompliſhments of that day. In addition to her native language, ſhe wrote and converſed in French; of muſic ſhe acquired a competent knowledge, and excelled particularly in needlework, which ſhe did not diſdain to practiſe after her elevation to the throne.

The empreſs Elizabeth, who had pitched upon her nephew the duke of Holſtein Gottorp Oldenbourg for her ſucceſſor, was alſo deſirous to chooſe a conſort for him, and the princeſs of Anhalt Zerbſt was ſelected upon this occaſion, when only fourteen years of age. She was chiefly indebted for ſo unexpected an honour to the tender regard which her imperial majeſty always entertained for the memory of her uncle, who had been her lover; and in an evil hour ſhe united the fate of the prince, better known afterwards by the name of Peter III. to that of the princeſs of Anhalt Zerbſt. In conſequence of a ſpecial invitation, the future empreſs repaired to St Peterſburgh, accompanied by her mother, and being admitted into the boſom of the Greek church, the ceremonial of marriage, after ſome delay, took place; on which theſe auguſt perſonages were formally acknowledged, by her imperial majeſty and the ſenate, as grand duke and ducheſs of Ruſſia. Elizabeth, at the ſame time, preſented them with the palace of Oranienbaum, delightfully ſituated on the gulf of Cronſtadt, as a ſummer reſidence; this had formerly belonged to Menzikof, the favourite of Peter the Great, who, in this capricious court, had been by turns a pie-boy, a prince, and an exile.

The grand duke was far from being handſome; on the contrary, his perſon was diſagreeable, and almoſt diſguſting. His education had been greatly neglected, and he was paſſionately fond of military parade. Frederick

Catherine. derick of Pruſſia was at once his friend and his model; he kept up a ſecret correſpondence with that monarch, at the time when Ruſſia was at open war with him; he was accuſtomed in his cups to kneel before a picture of his hero; and, after quaffing a bumper, he would exclaim, "My brother! we ſhall conquer the world together." Catherine.

The firſt moments of this union ſeemed to be peculiarly auſpicious. The illuſtrious pair were accuſtomed to withdraw themſelves daily, as if deſirous to enjoy the pleaſure of each other's company, in preference to the giddly diſſipation of a court. It was perceived at laſt, that grandeur was not incompatible with happineſs, aud that hymeneal felicity was not confined to plebeian life.

The empreſs hoped that the name and pretenſions of Prince Iwan would be obliterated by the iſſue of the grand duke, and the whole empire impatiently wiſhed for and now expected an heir to the throne of Peter the Great. It has ſince been diſcovered, that this young couple occupied their time in a far different manner than was then ſuſpected! His highneſs, it ſeems, retired from ſociety on purpoſe to perfect himſelf in the Pruſſian exerciſe, and his conſort on theſe occaſions participated in his diverſions, for he was accuſtomed to make her ſtand for hours together, as a centinel, with a muſket at her ſhoulder. This ſpecies of entertainment did not altogether ſuit the diſpoſition of a young princeſs of an ardent temperament, and her highneſs accordingly began, in her own language, to think "that ſhe was made for ſomething elſe." Although ſhe did not love, ſhe at this period governed her huſband, and even concealed his foibles; imagining at firſt that ſhe could not reign but by means of him, ſhe wiſely determined to make him appear worthy of a throne.

A marriage of eight years was not productive of any iſſue, and ſtrange ſuſpicions began to be entertained. This alarmed the court, for a formidable rival, who poſſeſſed a ſuperior claim to the throne, ſtill exiſted; it is true he was in bondage, but in a country like Ruſſia, the interval might not be long between a dungeon and a throne. The birth of a ſon and daughter, ſoon after this, put an end to all apprehenſions of this kind, and tended not a little to give ſtability to the empire.

The grand duke, who at times diſcovered noble, and even magnanimous ſentiments, had about this period formed a moſt unfortunate connexion with Elizabeth Voronſoff, a lady of high rank, but neither celebrated for her beauty nor her talents. He ſeldom ſaw his conſort in private, and all the hours that were not occupied either by military exhibitions, or the pleaſures of the table, were entirely devoted to his miſtreſs.

The grand ducheſs, on the other hand, is ſaid to have ſpent much of her time in company with a young Pole, whoſe hiſtory, like that of Catherine's, has ſince been interwoven with the annals of Europe. This was Count Poniatowſki, afterwards known as Staniſlaus Auguſtus king of Poland. He was the third ſon of a grandee of the ſame name, the favourite of Charles XII. of Sweden, by the princeſs Ezatoryſka, who boaſted the poſſeſſion of the nobleſt blood in Poland, as ſhe traced her deſcent from the Jagellon, the ancient ſovereigns of Lithuania. His perſon was of exquiſite ſymmetry, his air noble, his manners agreeable; in ſhort, he poſſeſſed a charming exterior, and his mind, a circumſtance extremely rare, was no leſs graceful than his perſon. At this period he was in no higher ſtation, than a gentleman in the ſuite of the miniſter plenipotentiary from England, who had formed an intimacy with his family during a former miſſion at Warſaw. Being now taught to look higher, he returned to his native country, and appeared ſoon after at Peterſburgh, as ambaſſador from the king of Poland. In this new capacity he did not forget to pay his reſpects at the little court of Oranienbaum, and the young plenipotentiary, with a view of ingratiating himſelf with the grand duke, ſmoked, drank, and praiſed the king of Pruſſia. At length Paul Petrowiſch received the Poliſh miniſter with coolneſs, and he was actually forbidden to viſit at the palace. This, however, it is ſaid, did not deter him from concealing the order of the white eagle, and diſguiſing himſelf as a mechanic, under which aſſumed quality he repaired one ſummer's evening to the gardens, in the neighbourhood of the gulf of Cronſtadt; but he was diſcovered by his highneſs, who ordered him to be brought before him, and, after affecting to reprimand the captain of his guard for his diſreſpect to the repreſentative of a crowned head, told him he was at liberty to depart. Catherine.

From this moment the grand ducheſs is ſaid to have changed both her ſyſtem and her conduct. She had formerly aſpired only to direct the counſels of the future emperor; ſhe now reſolved, if poſſible, to obtain the crown for her ſon, and the regency for herſelf. Such a taſk would have diſcouraged a common mind, for it was impoſſible to achieve this without prevailing on the empreſs to conſent to dethrone her own nephew. Beſtuchef, the grand chancellor, who hated the heir apparent, joined cordially in this ſcheme; and Elizabeth, who herſelf had obtained the crown by means of a revolution, was taught to tremble for her life, in conſequence of the deſigns of her ſucceſſor, who was repreſented as having reſolved to ſhorten her days by poiſon. But a ſudden and unexpected revolution in the miniſtry put an end to theſe intrigues; for Beſtuchef was driven into exile, and Poniatowſki recalled.

A long and melancholy interval now enſued, during which the ambition of the grand ducheſs was rather ſuſpended than annihilated. She, however, had recourſe to, and ſoothed her anguiſh by means of books; it was in her ſtudy that ſhe laid the foundation of her future greatneſs, and rendered herſelf in ſome meaſure deſerving of a throne. During her leiſure moments ſhe found means to gain partiſans, and ſhe acquired the favour of the ſoldiery, who did duty around her perſon, by means of her liberality and condeſcenſion. Peter, on the other hand, to the perſonal exertions of a common ſoldier, added the orgies of a debauchee. Surrounded by his male and female favourites, he conſumed whole days and nights in intoxication, and forgot that he was a prince. There were ſome few moments, however, when he appeared great, and even magnanimous, but unfortunately they were of ſhort duration; and it was his misfortune to have a weak woman for his miſtreſs, and an able and ambitious one for his wife.

Such was the ſituation of the court, when Elizabeth died, on the 5th of January 1762. This event, ſo productive of intereſting effects, had been long foreſeen

Catherine. by Catherine, who now began to act a more conſpicuous part on the theatre of public affairs. Her ſorrow, which appeared unbounded, was only equalled by her devotion. She was conſtantly employed either at her prayers in the cathedral, or occupied in public proceſſions, during which ſhe ſcrupulouſly adhered to all the ceremonious practices of the Greek church. The courtiers were aſtoniſhed at the ſudden change, and affected to ſurvey it with contempt; but it impoſed on the populace, and the prieſts were highly gratified with the zeal of the empreſs, more eſpecially as her conſort had always treated their myſteries with indignity.

Another deſign, meditated with no leſs art, proved unſucceſsful. She is ſaid to have made uſe of all her eloquence to perſuade Peter, that he ought to leave off the barbarous cuſtom of being proclaimed emperor by the army, in the ſame manner as his predeceſſors: inſtead of this, ſhe propoſed that his title ſhould be recogniſed by the ſenate alone, and produced a ſpeech which ſhe herſelf had compoſed for the occaſion; but Godowitz, one of the favourites, and the only friend of the new ſovereign, perceived the ſnare, and, partly owing to his entreaties, and partly from an attachment to every thing military, the ſoldiery were as uſual gratified with the ceremony of ſaluting the czar.

The grand duke now aſcended the throne, by the name of Peter III. and the commencement of the new reign appeared to be peculiarly auſpicious. The cataſtrophe, which terminated a ſhort reign of ſix months, may be attributed to three apparently trifling, but, in reality, irretrievable errors; for it is allowed on all hands, that if they did not conſtitute the original cauſe, they at leaſt afforded the pretext for his dethronement and murder. The firſt of theſe was, the ſudden peace with, and marked predilection for, the king of Pruſſia, certainly the greateſt monarch of his age; the ſecond, an attempt to reform a barbarous and fanatical clergy, whoſe power Peter I. had curbed, but whoſe perſons he ſtill affected to conſider as ſacred; the third was, the war againſt Denmark.

Let it be recollected, however, in honour to his memory, that the young monarch, immediately after his elevation, threw open the ſtate priſons, recalled Munich, Biron, Leſtock, and ſeveral others, who had offended him during the late reign, from Siberia; that he limited the deſpotiſm of his officers, abridged his own power, by aboliſhing a ſtate inquiſition, exerciſed under the name of *the Secret Council of Chancery;* and that he framed the memorable decree which enfranchiſed the nobles from compulſive ſervice in the army, and permitted them to travel without the royal permiſſion.

The following anſwer to a letter from the king of Pruſſia, who had requeſted him to be on his guard againſt the plot then meditating, conveys no unfavourable opinion of his heart.

"Touching the intereſt you expreſs for my ſafety, I requeſt you will reſt contented. I am called the father of my ſoldiers—they prefer a male to a female government. I walk alone conſtantly in St Peterſburgh—if any miſchief is meditated, it would have been effected long ſince; but I am a general benefactor. I repoſe myſelf on the protection of heaven; truſting to that, I have nothing to fear."

This falſe ſecurity proved his ruin. While his mind was occupied with plans of reform, and he aſpired to Catherine. rival, and even to excel, his illuſtrious predeceſſor, whoſe name he had aſſumed, a perſon who had ſworn fidelity to him at the altar, and who owed allegiance by the double ties of a wife and a ſubject, was actually employed in planning a conſpiracy, and organizing a revolt, againſt him. It has been ſaid that he intended to have ſhut up his conſort and ſon in a convent. But did a meditated impriſonment juſtify treachery, treaſon, and murder? On the other hand, it is known that, ſo far from this being the intention of Peter, he was preparing for a journey to Holſtein, and had actually empowered his conſort to act as regent during his abſence.

The miſtakes of the emperor did not eſcape the eagle eyes of his enemies. He purpoſed to carry his guards into Holſtein, with a view to recover the poſſeſſions wreſted from his anceſtors. The regiments that had hitherto done duty at the palace, and were inured to the indulgences of the capital, revolted at the idea of a foreign war: they had been accuſtomed to be governed by women, and they were taught to fix their eyes on the conſort of the czar.

It is not the leaſt wonderful part of her conduct, that, previouſly to the great cataſtrophe now meditating, Catherine contrived to appear abandoned by all the world. She knew how intereſting a female, and more eſpecially an empreſs, appeared while in diſtreſs; and ſhe took care to heighten the ſenſibility of the public, by burſting at times into a flood of tears. This artful woman had found means to attach many perſons to her deſtiny: it muſt be owned, however, that her adherents were neither ſo powerful, nor ſo numerous, as to afford her any well-founded hopes of ſucceſs. She had gained ſeveral ſubalterns, and ſome privates, of the guards: but her principal partiſans conſiſted of the princeſs d'Aſchekof, niece to the new chancellor; Prince Rozamouſki, who had riſen from obſcurity, having been originally a peaſant; Odart, an intriguing Italian; and Panin, governor to the grand duke. The arreſt of Paſſick, one of the conſpirators, ſeemed to lead to a diſcovery, which would have proved fatal to the malecontents; but this very circumſtance induced them to declare inſtantly, and in the end crowned an apparently raſh attempt with ſucceſs.

The empreſs, who was aſleep at the caſtle of Peterſhoff, received intimation of their deſign by a common ſoldier, who ſoon after returned with a carriage and eight horſes. On the faith of this man, and accompanied only by a few peaſants, a German female domeſtic, and a French valet de chambre, ſhe arrived at eight o'clock in the morning in the capital, and ſtopped oppoſite the barracks of the regiment of Iſmailoff. There ſhe addreſſed the ſoldiers in an eloquent ſpeech, intermingled with ſighs and tears, and actually found means to perſuade them that ſhe and her ſon had but that moment eſcaped from the hands of aſſaſſins, ſent by the emperor to murder them. This ſtory, by agitating the paſſions of the troops, had a wonderful effect on them, and they all ſwore, with the exception of only one regiment, to die in defence of her and the young archduke. On this the empreſs ordered a crucifix to be brought, and commanded the prieſts to adminiſter a new oath of allegiance. She afterwards repaired to one of the principal churches, where ſhe was

met

Catherine. met by the biſhop of Novogorod and the clergy, and, having returned thanks to Almighty God, aſcended a balcony, and preſented her ſon to the people. In a few hours ſhe was again ſeen, dreſſed in the uniform of the guards, riding at the head of a numerous and well-appointed army againſt her huſband.

That unfortunate prince firſt made a ſhew of reſiſtance, and manned his Lilliputian batteries, at Oranienbaum, with his Holſtein guards, in order to oppoſe what appeared to him to be a contemptible ſedition. When it was too late, he attempted to get poſſeſſion of Cronſtadt. He might ſtill have eſcaped to Revel, but the women in his galley were apprehenſive of danger, and the courtiers ſhuddered at the propoſition of old Munich, who wiſhed them to aſſiſt the ſailors in rowing.

On the firſt intelligence of the plot this intrepid warrior had repaired to his benefactor, and adviſed him to march directly to the capital, at the head of his German troops. "I ſhall precede you (ſaid the generous veteran), and my dead body ſhall be a rampart to your ſacred perſon." But, on the other hand, the emiſſaries of the empreſs, bathing his hands in their crocodile tears, deprecated reſiſtance, magnified the danger, and invited him to repoſe in the inviolable fidelity of his conſort. In ſhort, on the 14th of July, 1762, he was taken priſoner by the orders of his own wife, to whom he had been married 14 years, prevailed on by the threats and entreaties of Count Panin to renounce his crown, conveyed to the caſtle of Robſcha, and three days afterwards put to death. Of the titled minions, who perpetrated this daring murder, one carried the guilty marks of the czar's ſcymitar on his forehead to the grave, and another, tortured for years by the remembrance of the laſt bloody ſcene in the tragedy of his expiring ſovereign, exhibited a ſhocking ſpectacle of inſanity and remorſe.

The empreſs, on her aſſumption of the now vacant crown, notified the event to all the courts of Europe, under her new name of Catherine Alexiewna II. But there was ſtill a competitor for the empire, and ſuſpicion never ſlumbers near a throne. This was Prince Iwan, ſon to the princeſs of Mecklenburg, and grand nephew to Peter the Great and the empreſs Anna Iwanowna, who had deſtined him for her ſucceſſor; but, in conſequence of a former revolution, he was ſeized while yet an infant, and doomed to lead a life of captivity. During 18 years of precarious exiſtence, he had been ſhut up in the caſtle of Schluſſelbourg, and never in all that time did he breathe the open air, or behold the ſky, but once. This prince was viſited by Peter III. who finding him in an arched room, 20 feet ſquare, determined to ſet him at liberty; but, alas! the youth, in conſequence of his long and ſolitary confinement, had been deprived of his ſenſes. In this ſituation, the emperor determined to build a houſe for him, with a convenient terrace, where he might take the air daily within the fortreſs. Such, however, are the changes of fortune, that, in three weeks, he himſelf was alſo precipitated from a throne, and expoſed to a violent death. This event was but the prelude to that of Iwan; for, as orders had been given, in caſe of an attempt to reſcue him, that an end ſhould be put to his life, and a real or pretended plot having been hatched for this purpoſe, the motives and details of which have hitherto been involved in the moſt profound obſcurity, the unhappy prince experienced the ſame fate as his generous protector. Catherine.

Catherine being now firmly ſeated on the throne, wiſely determined to divert the thoughts of the nation from the late horrid ſcenes, and fix them on more agreeable objects. Having ſoothed Pruſſia, acquired a preponderance in the cabinet of Denmark, long become an abſolute monarchy, and entered into a league with the popular party in Sweden, not yet bereft of its liberties, ſhe caſt her eyes on Courland, then governed by Prince Charles of Saxony, the ſecond ſon of Auguſtus III. king of Poland; and, finding that country admirably ſituated for the increaſe of her preſent, and the extenſion of her future power, ſhe, in 1762, expelled the lawful ſovereign, and inveſted Biron, a creature of her own, with the ducal cap. Not content with this, the new duke, ſoon reduced to the moſt abject dependence, was prevented from reſigning his precarious power, and the ſtates aſſembled at Mittau were actually interdicted from nominating a ſucceſſor. This, however, was only a prelude to far greater ſcenes, for ſhe had hardly dethroned one ſovereign before ſhe undertook to create another. Auguſtus II. or as he is called by ſome, Auguſtus III. of Poland, having died at Dreſden, in 1763, her imperial majeſty did not let ſlip ſo fair an opportunity for interfering in the appointment to the vacant throne, and even placing one of her dependents on it. Count Poniatowſki, on the elevation of Catherine, had ſent a friend to Peterſburgh, to ſound the diſpoſition of the empreſs about his return to that capital, where he naturally hoped to participate in her power, and baſk in the ſunſhine of the royal ſmiles. But the more prudent German, who was at this very moment meditating a ſplendid proviſion for him elſewhere, prohibited the journey from political motives. Accordingly, notwithſtanding the oppoſition of the grand chancellor Beſtucheff, and indeed of all her miniſters, ſhe determined to inveſt him with the enſigns of royalty. The head of the houſe of Brandenburgh, ſwayed by his hatred to Saxony and Auſtria, or, what is ſtill more likely, the Pruſſian eagle having perhaps, even now, ſcented his future prey, Catherine was enabled to ſend 10,000 men into Poland, who, encamping on the banks of the Viſtula, overawed the deliberations of the diet, aſſembled on the 9th of May 1764, and placed Staniſlaus-Auguſtus on the throne. Thus, by the appearance of a camp filled with Ruſſian mercenaries, was violated one of the fundamental laws of the commonwealth, eſtabliſhed ever ſince the time of Sigiſmund-Auguſtus two centuries before, in conſequence of which the election of a king is deemed void while there are any foreign troops within the territories of the republic; and ſo juſtly jealous were the ancient Poles of their national independence, that the marſhal of the diet, on thoſe occaſions, was accuſtomed to requeſt all ambaſſadors to abſent themſelves, as he could not be anſwerable for the ſafety of their perſons.

Having conferred the crown of Poland, September 7. 1764, on an amiable and accompliſhed prince, who, on account of his youth, his poverty, and even his dependence on Ruſſia, would have been excluded from that painful pre-eminence had the free ſuffrage of the nation been collected; and who was, in conſequence

of

Catherine. of the hatred of his countrymen, ſtill more ſubjected to the dominion of the empreſs, ſhe began to prepare for a war againſt the Turks, which was accordingly declared in 1768. During this conteſt the Greek croſs was triumphant both by ſea and land. On the firſt of theſe elements her fleet, under Count Orloff, entered the ſtraits of Gibraltar, and carried terror and deſolation among the iſlands in the Archipelago, and throughout the defenceleſs ſhores of Aſia Minor; on the ſecond, her armies, under Galitzen and Romanzoff, achieved many important victories, ſeized on the fortreſs of Choczim, and prevailed on the Greek inhabitants of Wallachia and Moldavia to acknowledge her as their ſovereign.

In the mean time, however, a dangerous inſurrection broke out in the heart of her dominions, inſtigated by a Coſſack of the name of Pugatſcheff, who pretended to be Peter III. After diſplaying great valour and conſiderable talents, which had enabled him, at the head of raw and undiſciplined levies, to contend againſt veteran troops and experienced generals, this unfortunate man was at length ſeized, encloſed in an iron cage, and beheaded at Moſcow on the 21ſt of January 1775.

A peace had been concluded on the 21ſt of July, in the preceding year, with the Porte, which proved highly honourable to Ruſſia; but it was productive of little benefit, for the liberty of navigating the Black ſea, and a free trade with all the ports of the Turkiſh empire, which would have afforded ineſtimable advantages to a civilized people, was ſcarcely of any conſequence to a nation unacquainted alike with commerce and manufactures.

Accordingly, we find her imperial majeſty ſtill unſatisfied. Ambition, which in a female boſom is ever inſatiable, ſtimulated her to attempt new acquiſitions, and we learn with aſtoniſhment that her diplomatic artifices proved infinitely more hoſtile to the Turkiſh creſcent, than even her victorious arms. Scarcely had four years elapſed, when, after an armed negotiation, a new treaty of pacification was agreed to by the reluctant ſultan, on the 21ſt of March, 1779, in conſequence of which the Crimea was declared independent: an event not calculated to cloſe ancient jealouſies, but, on the contrary, to produce freſh diſſenſions, as it afforded an opening into the very heart of the Turkiſh empire, and a ready pretext for future interference. New claims and new conceſſions immediately followed. Ruſſia inſiſted on eſtabliſhing conſuls in the three provinces of Moldavia, Wallachia, and Beſſarabia, which ſhe was accordingly permitted to do by the treaty of 1781. Mortifying as this compliance was, it produced but a ſhort reſpite. The emperor Joſeph was now brought upon the political ſtage, and the Roman and Ruſſian eagles, after hovering over the carcaſe of the Turkiſh empire, and meditating to devour the whole, were at laſt content with a part of the prey. The empreſs, as it may be readily believed, was not inattentive to her own intereſts, and by the treaty of Conſtantinople, ſigned January 9. 1784, to Ruſſia was ceded the entire ſovereignty of the Crimea, which then received its ancient name of Taurica, the iſle of Taman, and part of Cuban.

It was now in the 58th year of her age, and the 25th of her reign, that Catherine may be ſaid to have Catherine. attained the very ſummit of her wiſhes. There was no one who pretended to the throne, unleſs her ſon Paul Petrowitz, an amiable prince, who had attained his 33d year, without diſplaying the leaſt ſymptom of ambition, and who beſides was ſuperintended with the moſt watchful jealouſy. She had triumphed over a nation, ſuppoſed to be the *natural* enemy of Ruſſia, both by arms and negotiations, and ſhe dazzled her barbarous ſubjects with the blaze of her glory, for they were eager to forget her errors, in order to contemplate a grandeur which ſoothed their national vanity. Knowing the effect of ſplendour upon ignorance, ſhe uſhered in the year 1787 with a brilliant journey to Cherſon. Accompanied thither at once by a court and an army, with foreign ambaſſadors, an emperor and a king in her train, ſhe intended to have aſſumed the high ſounding titles of Empreſs of the Eaſt, and Liberator of Greece. At Kiow, where ſhe remained during three months, ſhe was received under triumphal arches, and, having heard the petitions of the deputies from diſtant nations, and extended the walls of that city, ſhe inſcribed, with an arrogant anticipation, the following motto, in Greek characters, on the quarter next to Conſtantinople: "Through this gate lies the road to Byzantium."

Scarcely, however, had the empreſs, after viſiting Moſcow, returned to her capital, than the Turk thought proper to declare war. Her majeſty, long ſince prepared for an event which was far from being diſpleaſing, called forth the ſtipulated ſuccours of her ally the emperor; and the combined army under the Prince de Cobourg made itſelf maſter of Choczim, at the end of a ſiege of three months. Oczakow, after a ſtill more obſtinate reſiſtance, was taken by ſtorm, by the Ruſſians alone. A diverſion, however, was made by the king of Sweden, who, ſubſidized with Turkiſh gold, and directed by Pruſſian counſels, fought his own battles at the expence of his ally. But the exertions of this monarch were principally confined to the indeciſive naval actions of Stoogland, in which both parties claimed the victory, and this was ſoon after followed by a convention for peace.

Diſembarraſſed from an active, if not a powerful enemy, the empreſs no longer confined her conqueſts to the courſe of the Danube, but crowned the campaign with the capture of Iſmael, which was taken by ſtorm on the 22d of December. On this occaſion Suwarrow, one of her favourite generals, diſplayed a horrid mixture of courage and cruelty, and thus proved, to a demonſtration, that perſonal bravery is far from being incompatible with the deadlieſt revenge. Incenſed at the gallant reſiſtance of the Turks, like Cæſar, he ſnatched a ſtandard from a ſubaltern, and planted it with his own hand on the walls of the city; like Sylla, he doomed the vanquiſhed to experience a bloody proſcription, and upwards of 30,000 men, women, and children, if we are to credit the boaſtful account of the barbarians themſelves, periſhed by the ſword and bayonet of the unſparing Ruſſians.

Inſtead of regaining the Crimea, as had been expected by the ſultan, the fortreſs of Oczakow, and all the territories between the rivers Bog and Dneiſter, were aſſigned to the empreſs, who now found herſelf nearer

Catherine. nearer to that Byzantium, on which ſhe had ſo eagerly fixed her eye, by a whole campaign, than at the commencement of hoſtilities.

Having concluded a final treaty of peace with the Turk, on the 9th of January 1792, by which the river Dneiſter became the boundary of the two empires, and was to be navigated by both, the empreſs had more time to apply her attention to European politics. Part of Poland had been diſmembered and partitioned during the year 1772, not only in contravention to the general rights of nations, but in direct oppoſition to the moſt ſolemn treaties on the part of Ruſſia, Pruſſia, and Auſtria. The revolution which took place in that ill-fated country on May 3. 1791, and which afforded the proſpect of a happy and ſtable government to the remains of the republic, was the ſignal of its annihilation. The imperial and royal ſpoilers ſeized this opportunity to fall once more in concert on their prey, which they forced to expire under their talons; and they have ſince cut it into ſhares, and attempted to diſfigure it by new names, leſt it ſhould one day be reclaimed by the lawful owners. After this inſult to humanity, Staniſlaus, whom poſterity may acknowledge as an unfortunate, but ſurely not as a great king, was forced ſoon after to abdicate, and allowed to retire into obſcurity with his miſtreſs, his children, and a penſion.

Another great object had for ſome time engaged the attention of Catherine and her cabinet. This was the French revolution; an event pregnant with conſequences that involved the claims, or, more properly ſpeaking, the exiſtence of all the ſovereigns of Europe. With a treaſury nearly exhauſted by the war with the Ottoman Porte, which was not then terminated, and at a diſtance from the ſcene of action, the empreſs could not well engage in the conteſt; but ſhe readily entered into the coalition, and ſoon after ſubſidized her late enemy the king of Sweden; but that enterpriſing prince met his fate, on the night of the 16th of March 1792, by the hand of an aſſaſſin.

Notwithſtanding this ſiniſter event, the head of the Greek church, compaſſionating the fate of the pretended father of the Chriſtian world, promiſed to exert herſelf for the reſtoration of Avignon to the holy ſee. She alſo launched forth a menacing manifeſto againſt France, and prepared for a new war.

The empreſs has hitherto been contemplated in her public character. It may not be amiſs now to fix our eyes on the individual; to pay ſome attention to the ſex of the ſovereign, and, viewing majeſty as it were in an undreſs, behold the woman lurking behind the princeſs.

It might have been ſuppoſed, that in the neighbourhood of the Hyperborean regions, the paſſions, if not dormant, would be at leaſt moderate, and that the men would conſequently be temperate, and the women chaſte. The contrary, however, is the caſe: and it is left to the philoſopher to determine, whether the double windows and heated rooms of St Peterſburgh, added to an affectation of oriental manners, be not to the full as critical, in reſpect to female virtue, as the climate of Naples and Turin. Certain it is, however, that, during the reign of Catherine II. no remarkable increaſe of indecorum took place, and that any occaſional indiſcretions appear to have made but little impreſ- Catherine. ſion on the public mind.

Count Gregory Orloff, diſtinguiſhed in Ruſſia by the appellation of Gregorevitſch, was one of the handſomeſt men in the north. Gratitude and affection both conſpired to procure him a favourable reception at court: and from an obſcure condition he ſoon roſe to the higheſt offices of the ſtate, which he, in fact, governed. His opinion in the cabinet was liſtened to with deference, and he was inveſted with the ſupreme military command. Still higher honours awaited him. The empreſs-queen was ſolicited to grant him a diploma of prince of the empire; it was next in contemplation to decorate him with the titles of duke of Ingria and Carelia, and the chancellor Beſtucheff actually propoſed to the empreſs that he ſhould be admitted as the partner of her bed and throne. But this ſcheme was blaſted by the interference of Count Panin; who, not content with his own remonſtrances, invoked the interpoſition of Razumoffsky and Vorontzoff, and found means to divert Catherine from her purpoſe.

Soon after this the conduct of Orloff began to give diſſatisfaction: for he abſented himſelf from court; went but ſeldom to the palace; reſided principally in the country; and, being extremely addicted to hunting, dedicated whole weeks to the chaſe of the bear. Panin, who had frequently experienced his arrogance, deemed this a happy opportunity to procure his diſgrace. He accordingly introduced a young officer named Viſſenſky, who, being directed by the artful miniſter, behaved in ſuch a manner as to give reaſon to believe that he would ſoon reign uncontrolled. Pride, however, on this occaſion ſupplied the place of affection, and Orloff ſuddenly altering his conduct, his rival was diſmiſſed with ſuperb preſents, and inveſted with an employment that required his reſidence in a remote province.

A new favourite ſoon after made his appearance in the perſon of Vaſſiltſchikoff, a ſubaltern in the guards, and advantage was taken of the abſence of Orloff to introduce him at the Hermitage. This officer was young and handſome; but nature, which had been laviſh to his perſon, ſeems to have been at no pains with his mind. He was immediately appointed chamberlain to the empreſs, enriched with ſplendid preſents, and treated with the moſt flattering attention. In the mean time Gregorevitſch, who had been appointed to treat with the Turkiſh plenipotentiaries relative to a peace, on hearing of this unexpected event, inſtantly returned to the capital from Fokſhiani, but was arreſted at the gates of Peterſburgh, and ſtripped of all his employments. He, however, experienced the imperial bounty, and received, as a recompenſe for his ſubmiſſion, the ſum of 100,000 rubles in hand, a penſion of 150,000 more, a magnificent ſervice of plate; and, to crown the whole, an eſtate, with 6000 peaſants upon it, was made over to him.

Vaſſiltſchikoff, during 22 months, enjoyed all the diſtinction belonging to the reigning favourite; but at the end of that period he alſo found occaſion to lament the inconſtancy of fortune. This young man had conducted himſelf with great prudence, for he had never abuſed his influence. He poſſeſſed none of that haughtineſs ſo common to upſtarts; and he did not appear

Catherine. pear eager to increaſe his own fortune, or to diminiſh that of his rivals. Such was his moderation, that, as his elevation excited no envy, ſo his diſgrace was unaccompanied by exultation. His faults are ſtill unknown; and moſt probably he had ceaſed to pleaſe. His retreat, however, was accompanied by every mark of reſpect; and as he repaired to Moſcow, the place of his deſtined exile, he received preſents on his journey, which might be ſtyled imperial on account of their magnificence.

No ſooner was this change made public than Orloff appeared once more on the ſcene, and was readmitted to all his former influence. Suppoſing Panin to be the cauſe of his late exile, he extorted a promiſe from his royal miſtreſs to diſmiſs him from all his employments. Her aſſent was given with reluctance; and the prayers of the grand duke, who was too generous to ſuffer his preceptor to fall a prey to the ſuſpicions of a man he did not love, induced her to revoke her intentions.

In the mean time the manly air and elegant appearance of Potemkin made a great impreſſion on an illuſtrious perſonage. This officer had been bred in the guards; and, perceiving on that memorable day when the empreſs, mounted on a fine charger and dreſſed in regimentals, exhibited herſelf at the head of the troops, that ſhe had forgotten to place a plume in her hat, he ſnatched this decoration from his own, and preſented it to the new ſovereign. Neither this action, nor the grace with which it was performed, had eſcaped unnoticed; and the time was now arrived when his attachment was to receive an ample remuneration.

The poſt of favourite is almoſt peculiar to Ruſſia, and was during many years conſidered as an *official employment*. Ever ſince 1730 the nation had been governed by women, except during the ſhort and unfortunate reign of Peter III. In fine, it ſeemed to be ſanctioned, if not by a fundamental law of the empire, at leaſt by preſcription; as four empreſſes had ſucceſſively conſecrated it by their practice, and the age of the laſt Elizabeth made it be conſidered in ſome meaſure as a mere appendage to imperial grandeur.

Potemkin ſoon grew giddy with ſucceſs, and his pride and preſumption keeping pace with his elevation, he accordingly expoſed himſelf to a number of diſagreeable events. Boaſting one day of the extent of his power, in preſence of Count Alexis Orloff, the brother of his predeceſſor, he received a blow which deprived him of an eye; and Prince Gregory Orloff having requeſted his diſmiſſion, he was forced to repair to Smolenſk, at once the place of his nativity and exile. Such was his vexation, partly from the loſs of his eye, and partly from his diſgrace, that he actually entertained ſome ideas of turning monk; but a ſubmiſſive letter produced his recal; and from that moment he ſeemed to have dropped all thoughts of the cowl.

Ambition now appears to have taken complete poſſeſſion of the boſom of Potemkin; and this was amply gratified, for his influence ſoon extended to every department of the ſtate, and he himſelf, after procuring the diſmiſſion of Count Zachar Chernicheff, became vice-preſident at war, with a ſeat in the council. But his aſpiring hopes were not yet gratified, for he entertained ſtill higher expectations.

With a view to the accompliſhment of theſe, he affected to be once more ſeized with a fit of religion; and kept Lent with great ſtrictneſs, living upon roots and water during that holy ſeaſon. He alſo wearied Catherine. all the ſaints in the Greek calendar with his prayers; went daily to confeſſion; and, having ſelected on this occaſion the ſame prieſt that afforded abſolution to a great perſonage, he beſought him to inform her, that his alarmed conſcience could no longer permit him to indulge in an intercourſe, which, by marriage alone, would ceaſe to become criminal.

This project, however, failed of ſucceſs; and, ſoon after the empreſs's return to Peterſburgh (for it was at Moſcow that it had been firſt conceived), a young man from the Ukraine, of the name of Zavadoffsky, was honoured with the imperial countenance, while the haughty Potemkin received the cuſtomary intimation, "that he muſt prepare to travel." Potemkin did not dare to diſobey, but he evaded the order; for, ſetting out in great form, he proceeded a few miles towards the place indicated for his exile, but returned in the courſe of next day, and placed himſelf in the evening exactly oppoſite to the empreſs as ſhe was about to ſit down to whiſt. Every one expected to behold ſome ſignal mark of the imperial diſpleaſure; but, on the contrary, Catherine, handing him a pack of cards, deſired the ex-favourite to cut in, obſerving that he had always been a fortunate player. His poſts, his honours, his influence, were all reſtored to him, and he now occupied a new ſituation about the perſon of her imperial majeſty, for he became her friend.

In the mean time the boſom of the humble Zavadoffsky began to catch the flame of ambition; and, as he was jealous of the grandeur of Potemkin, he aimed a deadly blow at his conſequence. But the miniſter at war, become wily in his turn, warded it off, and made it recoil on the head of his rival. Perceiving a handſome young Servian officer of huſſars, of the name of Zoritch, who had repaired to Peterſburgh in ſearch of promotion, he preſented him with a captain's commiſſion, and in a few days he was perceived behind the chair of the empreſs. A large eſtate, the rank of major-general, and an immenſe ſum of money, ſoon became the appanage of this fortunate youth; but the empreſs perceiving that he was ignorant, and being diſguſted at his want of accompliſhments, recommended, as he could ſpeak no language but that of the Ruſſian boors, that he ſhould be ſent abroad for improvement.

Fortune ſeems to have been in a playful mood when ſhe elevated Rimſky Korzakoff to the poſt of chamberlain, and ſucceſſor to the Servian. This man had actually been a ſerjeant in the guards; he was now declared aid-de-camp general to the empreſs, and preſented with the palace of Vaſſiltſchikoff.

He proved to be a vain upſtart, whoſe dreſs exhibited a profuſion of diamonds, and whoſe conduct was ſuch as could not fail to involve him in ruin. This ſpeedily occurred; for, being detected in a ſecret correſpondence with a lady, ſhe was baniſhed from court, and he was obliged to repair to Moſcow.

The ſame day that beheld his diſgrace, witneſſed the good fortune of Lanſkoi, a Pole by deſcent, and an officer of the body guards by profeſſion. The education of this young man had been neglected; but this defect was in ſome meaſure remedied by the zeal and attachment of an illuſtrious perſonage, who ſuperintended

Catherine. tended his improvement; and in a ſhort time he became as remarkable for the ſuperior elegance of his manners, as the graces of his perſon: but, while in the flower of his youth, and the very height of his favour, he was attacked by a mortal diſeaſe, which cut him off after a ſhort illneſs. He died in the arms of his miſtreſs, who was inconſolable on the occaſion, and refuſed to take any ſuſtenance during three whole days. A mauſoleum, the plan of which was ſketched out by an Engliſh artiſt, atteſted the reſpect of the empreſs, who burſt into tears on ſeeing it two years after. His fortune he had bequeathed to her imperial majeſty, but ſhe preſented it, with her accuſtomed generoſity, to the ſiſter of this handſome youth.

The next perſon who aſpired to the poſt of favourite was a young man educated in Scotland, and who had become a fellow of the Royal Society of London. This was Prince Daſhkoff, ſon to the celebrated princeſs of the ſame name, who had participated in the memorable revolution that levelled Peter III. with the duſt. A lieutenant of the name of Yermoloff anticipated him, however, in this poſt, to which he was raiſed by the intereſt of Potemkin; but, proving ungrateful to his benefactor, he was ſuddenly diſgraced, being replaced by Momonoff, who attended her imperial majeſty during her journey to the Crimea. He fell in love, however, with a lady of the court; and no ſooner was the empreſs informed of this circumſtance, than ſhe inſiſted on his marrying her immediately; after which they were ſent into exile at Moſcow.

Plato Zuboff, an officer of the horſe guards, ſupplied his place. This aſpiring young man, not content with wealth and honours, affected public employments; and it is aſſerted that the idea of the ſecond diviſion of Poland originated with him. In a ſhort time he became omnipotent at Peterſburgh. He was decorated with the title of prince; received the poſt of grand maſter of the artillery; all the admirals, generals, and miniſters of the empire, were to be ſeen at his levee bending lowly before him; and, if we are to believe the author of a work of ſome reputation, paying their compliments at the ſame time, in great form, to his favourite monkey.

Catherine hitherto had only afforded empty promiſes to the enemies of France; but, at the inſtigation of Zuboff, ſhe now formed the deſign of giving effectual aſſiſtance to the confederated kings; and, as a proof of her intentions, iſſued orders for a ſquadron of men of war to join the Engliſh fleet, and commanded a levy of 60,000 troops. She at the ſame time proſecuted a war on the frontiers of Perſia, where her army, under the command of a near relation of the grand maſter of the artillery, had experienced a moſt humiliating defeat; and ſhe was now preparing to ſend freſh ſuccours to his aſſiſtance.

Such were the projects that occupied the mind of Catherine, the overthrow of the French republic, and the ſubjugation of the diſtant Perſians, when ſhe was ſmitten by the hand of death. This fortunate princeſs had hitherto enjoyed an almoſt uninterrupted ſtate of good health during the whole of her long reign. She was ſometimes, indeed, ſubject to a colic, and her legs were now and then obſerved to ſwell; but neither of theſe ſymptoms were alarming.

On the morning of the 9th of November ſhe roſe at her uſual hour, and breakfaſted on coffee according to cuſtom. Some time after ſhe retired to her cloſet, and her long abſence affording cauſe of ſuſpicion to her attendants, they entered the apartment and found her lying ſpeechleſs. Dr Rogerſon, her phyſician, being ſent for, he treated her diſeaſe as an apoplexy; and conſiderable relief ſeemed to enſue after the application of the lancet. But the empreſs never entirely recovered her ſenſes; and did not utter a ſingle word during the remainder of her life, which was prolonged to ten o'clock in the evening of November 10. 1797. Catherine.

Thus, with her uſual good fortune, after a very ſhort illneſs, died Catharine II. empreſs of all the Ruſſias. During her youth ſhe had been extremely handſome, but ſhe got fat as ſhe increaſed in years; ſhe, however, preſerved a certain air of gracefulneſs, intermingled with dignity, until the laſt moment of her life.

Her majeſty in perſon was not above the middle ſize, but, being well proportioned and carrying her head high, ſhe appeared tall. Her forehead was open, her noſe aquiline, her mouth agreeable, and her chin, without being ugly, was rather long. Her hair, in which ſhe took great delight, was auburn, and her eye-brows dark and thick. Her eyes, according to ſome, were blue, while others inſiſt that they were of a brown hue. Upon the whole, her phyſiognomy was not deficient in expreſſion; but ſhe had ſuch a command of her countenance, that no one could there diſcover the ſecrets of her heart.

Her imperial majeſty was accuſtomed, on great occaſions, to dreſs in a ſplendid manner, and to wear a profuſion of jewels. Being particularly fond of diamonds, ſhe poſſeſſed a prodigious number; and one in particular was the largeſt that had ever been ſeen in Europe. Catherine, however, was accuſtomed in general to affect the ancient Ruſſian faſhions, for the moſt part wearing green, out of compliment to the nation. Her hair was powdered but ſlightly. On the other hand, her face was covered with rouge; and as her imperial majeſty, like the ladies in the French court, wore it in proportion to her rank, it is not to be wondered if it was of a high colour.

The ſtricteſt temperance was regularly preſerved by Catherine, in a country, and at a court, where a little deviation would not have given occaſion to much ſcandal. A ſlight breakfaſt, a moderate dinner, and two or three glaſſes of wine (for ſhe never indulged in ſupper), conſtituted her uſual diet.

It is far more eaſy to deſcribe the empreſs than the woman. The acts of the former have now become hiſtory, but thoſe of the latter muſt be left to the pen of genius, that can analyze the ſprings of human action.

It muſt be confeſſed that both ſhe and the empire appear to have been frequently a prey to favouritiſm; and this part of her conduct, by being connected with the happineſs of millions of her ſubjects, is highly cenſurable.

As a ſovereign ſhe ſtands conſpicuous. She increaſed the extent of Ruſſia, and added not only new countries, but new nations, to that mighty empire. As a conqueror her victories were numerous and brilliant; ſhe triumphed equally by ſea and by land, and, had ſhe lived but ten years longer, might have realized

Catherine. the proud dream of her ambition, and beheld her grandſon Conſtantine ſitting on the throne of the Ottomans. Her merit as a legiſlator, too, is great; but ſhe would have been far more worthy of our admiration, had ſhe effected the generous idea of enfranchiſing all the peaſantry of her immenſe dominions.

She was the only ſovereign of Ruſſia who ever exhibited a taſte for letters. This was not all; ſhe was an author herſelf, and did not diſdain to compoſe little treatiſes for her grand-children, whoſe education ſhe ſuperintended.

For muſic ſhe alſo poſſeſſed an exquiſite reliſh, and brought Gabrielli, and a number of ſingers of great note, from Italy, allowing them liberal ſalaries, and treating them with great attention. Throughout the whole of her long reign Catherine alſo evinced a marked predilection for painting. In the midſt of a war with the Turks ſhe purchaſed pictures in Holland, to the amount of 60,000 rubles, all of which were loſt in conſequence of a ſhip's being wrecked on the coaſt of Finland. This, however, rather ſerved to ſtimulate her to freſh exertions, and her agents accordingly procured whatever was to be found in Italy worthy of notice. The Houghton collection from England was alſo transferred, by an act of her munificence, to the ſhores of the Baltic; and, while it added to her glory, diſgraced this nation, in the eyes of foreigners.

Her conduct to learned men was truly worthy of a woman of genius. She was proud of the correſpondence and friendſhip of Voltaire; ſhe invited Diderot to her court, and lived with him, while there, in habits of the utmoſt familiarity; to D'Alembert ſhe looked up as to a ſuperior being, and endeavoured, although in vain, to ſeduce him to reſide at St Peterſburgh; but he poſſeſſed a haughty ſoul, was devoted to liberty, and would not conſent to degrade the mind of a freeman, by reſiding among a nation of ſlaves.

To the honour of Catherine, ſhe was extremely attentive to the education of her people, and inſtituted a prodigious number of ſchools for their inſtruction. To remove their prejudices againſt inoculation, ſhe herſelf ſubmitted to the operation, and thus hazarded her life for her nation. Amidſt the ſchemes of grandeur, the allurements of power, and the gratification of the paſſions, ſhe found leiſure to civilize and inſtruct her ſubjects; this added not a little to her glory, as it contributed to the benefit of ſo large a portion of the human race; but it will inſenſibly operate againſt a deſpotic government, by rendering the boors unfit for their chains, which they will ſome day break, perhaps, on the heads of the boyars, who at once enſlave and oppreſs them.

No woman could ſo eaſily forgive, and in this point of view her conduct muſt be allowed to have poſſeſſed a great ſhare of magnanimity. She generouſly pardoned old Munich and Godowitz, the one the counſellor, the other the favourite of Peter III. She even admitted the former of theſe into her confidence, and would have conferred honours and preferments on the latter; but he loved his late ſovereign, and with a noble ſcorn ſpurned at the proffered friendſhip of his ſucceſſor. To the miſtreſs of Peter III. although her own rival, ſhe granted her life, reſtored her fortune, and at length admitted her daughters to honourable ſituations at court. Catherine || Cathneſs.

No perſonage in our own times has attracted a greater ſhare of cenſure and eulogium than Catherine; and no woman in any age ever exhibited more of the maſculine greatneſs of one ſex, and the feminine weakneſs of another. As a female, ſhe appears at times the ſlave of paſſion, and the puppet of her courtiers; but while we behold her diminiſhing, in this point of view, into inſignificance, we look again, and contemplate the *ſovereign*, towering like an immenſe coloſſus, and with one foot placed on Cherſon, and another at Kamtſchatka, waving her iron ſceptre over the ſubject nations, and regulating the deſtiny of a large portion of mankind.

The frailties, however, of the woman will ſoon be forgotten, while the glory that encircles the brows of the legiſlator and conqueror will long continue to dazzle the eyes of an admiring world. The preſent age, however, ſhudders at the untimely fate of Peter and of Iwan, and poſterity will not eaſily pardon the degradation of Staniſlaus, the partition of Poland, and the maſſacres of Iſmailow and of Praga.

Catherine, Order of St, in modern hiſtory, belongs to ladies of the firſt quality in the Ruſſian court. It was inſtituted in 1714 by Catherine wife of Peter the Great, in memory of his ſignal eſcape from the Turks in 1711. The emblems of this order are a red croſs, ſupported by a figure of St Catherine, and faſtened to a ſcarlet ſtring edged with ſilver, on which are inſcribed the name of St Catherine, and the motto, *Pro fide et patria*.

CATHERLOUGH, a town of Ireland, in the county of Catherlough, and province of Leinſter; ſeated on the river Barrow, 16 miles N. E. of Kilkenny. W. Long. 7. 1. N. Lat. 52. 45.

Catherlough, a county of Ireland, about 28 miles in length, and eight in breadth; bounded on the eaſt by Wicklow and Wexford, on the weſt by Queen's county, on the north by Kildare, and on the ſouth and ſouth-weſt by Wexford. It contains 5600 houſes, 42 pariſhes, five baronies or boroughs, and ſends ſix members to parliament, viz. two for the county, two for Catherlough, and two for Old Leighlen.

CATHETER, in *Surgery*, a fiſtulous inſtrument, uſually made of ſilver, to be introduced into the bladder, in order to ſearch for the ſtone, or diſcharge the urine when ſuppreſſed. See Surgery *Index*.

CATHETUS, in *Geometry*, a line or radius falling perpendicularly on another line or ſurface; thus the catheti of a right-angled triangle are the two ſides that include the right angle.

Cathetus of Incidence, in *Catoptrics*, a right line drawn from a point of the object, perpendicular to the reflecting line.

Cathetus of Reflection, or *of the Eye*, a right line drawn from the eye perpendicular to the reflecting plane.

Cathetus of Obliquation, a right line drawn perpendicular to the ſpeculum, in the point of incidence or reflection.

Cathetus, in *Architecture*, a perpendicular line, ſuppoſed to paſs through the middle of a cylindrical body, as a balluſter, column, &c.

CATHNESS. See Caithness.

CATHOLIC,

Catholic || Cato.

CATHOLIC, in a general ſenſe, denotes any thing that is univerſal or general.

Catholic Church. The riſe of hereſies induced the primitive Chriſtian church to aſſume to itſelf the appellation of *catholic*, being a characteriſtic to diſtinguiſh itſelf from all ſects, who, though they had party names, ſometimes ſheltered themſelves under the name of Chriſtians.

The Romiſh church diſtinguiſhes itſelf now by the name of *Catholic*, in oppoſition to all thoſe who have ſeparated from her communion, and whom ſhe conſiders as heretics and ſchiſmatics, and herſelf only as the true and Chriſtian church. In the ſtrict ſenſe of the word, there is no Catholic church in being, that is, no univerſal Chriſtian communion.

Catholic King, is a title which has been long hereditary to the king of Spain. Mariana pretends, that Reccarede firſt received this title after he had deſtroyed Arianiſm in his kingdom, and that it is found in the council of Toledo for the year 589. Vaſce aſcribes the origin of it to Alphonſus in 738. Some allege that it as been uſed only ſince the time of Ferdinand and Iſabella. Colombiere ſays, it was given them on occaſion of the expulſion of the Moors. The Bollandiſts pretend it had been borne by their predeceſſors the Viſigoth kings of Spain; and that Alexander VI. only renewed it to Ferdinand and Iſabella. Others ſay that Philip de Valois firſt bore the title; which was given him after his death by the eccleſiaſtics, on account of his favouring their intereſts.

In ſome epiſtles of the ancient popes, the title *catholic* is given to the kings of France and of Jeruſalem, as well as to ſeveral patriarchs and primates.

CATHOLICON, in *Pharmacy*, a kind of ſoft purgative electuary, ſo called, as being ſuppoſed an univerſal purger of all humours.

CATILINE, Lucius, a Roman of a noble family, who, having ſpent his whole fortune in debauchery, formed the deſign of oppreſſing his country, deſtroying the ſenate, ſeizing the public treaſury, ſetting Rome on fire, and uſurping a ſovereign power over his fellow citizens. In order to ſucceed in this deſign, he drew ſome young noblemen into his plot; whom he prevailed upon, it is ſaid, to drink human blood as a pledge of their union. His conſpiracy, however, was diſcovered by the vigilance of Cicero, who was then conſul. Upon which, retiring from Rome, he put himſelf at the head of an army, with ſeveral of the conſpirators, and fought with incredible valour againſt Petreius, lieutenant to Antony, who was colleague with Cicero in the conſulſhip; but was defeated and killed in battle. See *(Hiſtory of)* Rome.—Salluſt has given an excellent hiſtory of this conſpiracy.

CATO, Marcus Portius, the cenſor, one of the greateſt men among the ancients, was born at Tuſculum in the year of Rome 519, about the 232d before Chriſt. He began to bear arms at 17; and, on all occaſions, ſhowed extraordinary courage. He was a man of great ſobriety, and reckoned no bodily exerciſe unworthy of him. He had but one horſe for himſelf and his baggage, and he looked after and dreſſed it himſelf. At his return from his campaigns, he betook himſelf to plough his ground; not that he was without ſlaves to do it, but it was his inclination. He dreſſed alſo like his ſlaves, ſat down at the ſame table with them, and partook of the ſame fare. He did not in the meanwhile neglect to cultivate his mind, eſpecially in regard to the art of ſpeaking; and he employed his talents, which were very great, in generouſly pleading cauſes in the neighbouring cities without fee or reward. Valerius Flaccus, who had a country ſeat near Cato, conceiving an eſteem for him, perſuaded him to come to Rome; where Cato, by his own merit, and the influence of ſo powerful a patron, was ſoon taken notice of, and promoted. He was firſt of all elected tribune of the ſoldiers for the province of Sicily; he was next made queſtor in Africa under Scipio. Having in this laſt office reproved him for his profuſeneſs to his ſoldiers, the general anſwered, that "he did not want ſo exact a queſtor, but would make war at what expence he pleaſed; nor was he to give an account to the Roman people of the money he ſpent, but of his enterpriſes, and the execution of them." Cato, provoked at this anſwer, left Sicily, and returned to Rome. Cato.

Afterwards Cato was made prætor, when he fulfilled the duties of his office with the ſtricteſt juſtice. He conquered Sardinia, governed with admirable moderation, and was created conſul. Being tribune in the war of Syria, he gave diſtinguiſhed proofs of his valour againſt Antiochus the Great; and at his return ſtood candidate for the office of cenſor. But the nobles, who not only envied him as a *new* man, but dreaded his ſeverity, ſet up againſt him ſeven powerful competitors. Valerius Flaccus, who had introduced him into public life, and had been his colleague in the conſulſhip, was a ninth candidate, and theſe two united their intereſts. On this occaſion Cato, far from employing ſoft words to the people, or giving hopes of gentleneſs or complaiſance in the execution of his office, loudly declared from the roſtra, with a threatening look and voice, "That the times required firm and vigorous magiſtrates to put a ſtop to that growing luxury which menaced the republic with ruin; cenſors who would cut up the evil by the roots; and reſtore the rigour of ancient diſcipline." It is to the honour of the people of Rome, that, notwithſtanding theſe terrible intimations, they preferred him to all his competitors, who courted them by promiſes of a mild and eaſy adminiſtration; the comitia alſo appointed his friend Valerius to be his colleague, without whom he had declared that he could not hope to compaſs the reformations he had in view. Cato's merit, upon the whole, was ſuperior to that of any of the great men who ſtood againſt him. He was temperate, brave, and indefatigable; frugal of the public money, and not to be corrupted. There is ſcarce any talent requiſite for public or private life which he had not received from nature, or acquired by induſtry. He was a great ſoldier, an able ſtateſman, an eloquent orator, a learned hiſtorian, and very knowing in rural affairs. Yet, with all theſe accompliſhments, he had very great faults. His ambition being poiſoned with envy, diſturbed both his own peace and that of the whole city as long as he lived. Though he would not take bribes, he was unmerciful and unconſcionable in amaſſing wealth by all ſuch means as the law did not puniſh.

The firſt act of Cato in his new office, was naming his colleague to be prince of the ſenate: after which the cenſors ſtruck out of the liſt of the ſenators the

Cato. names of seven persons; among whom was Lucius the brother of T. Flaminius. Lucius, when consul, and commanding in Gaul, had with his own hand murdered a Boian of distinction, a deserter to the Romans; and he had committed this murder purely to gratify the curiosity of his pathic, a young Carthaginian, who longing to see somebody die a violent death, had reproached the general for bringing him away from Rome just when there was going to be a fight of gladiators. Titus Flaminius, full of indignation at the dishonour done to his brother, brought the affair before the people; and insisted upon Cato's giving the reason of his proceeding. The censor related the story; and when Lucius denied the fact, put him to his oath. The accused, refusing to swear, was deemed guilty; and Cato's censure was approved. But no part of the censor's conduct seemed so cruel to the nobles and their wives as the taxes he laid upon luxury in all its branches; dress, household furniture, women's toilets, chariots, slaves, and equipage. These articles were all taxed at three *per cent.* of the real value. The people, however, in general, were pleased with his regulations; insomuch that they ordered a statue to be erected to his honour in the temple of *Health*, with an inscription that mentioned nothing of his victories or triumphs, but imported only, that by his wise ordinances in his censorship he had reformed the manners of the republic. Plutarch relates, that before this, upon some of Cato's friends expressing their surprise, that when many persons without merit or reputation had statues, he had none; he answered, "I had much rather it should be asked why the people have not erected a statue to Cato, than why they have." Cato was the occasion of the third Punic war. Being despatched to Africa to terminate a difference between the Carthaginians and the king of Numidia, on his return to Rome he reported that Carthage was grown excessively rich and populous, and he warmly exhorted the senate to destroy a city and republic, during the existence of which Rome could never be safe. Having brought from Africa some very large figs, he showed them to the conscript fathers in one of the lappets of his gown. "The country (says he) where this fine fruit grows is but a three days voyage from Rome." We are told, that from this time he never spoke in the senate upon any subject, without concluding with these words, "I am also of opinion, that Carthage ought to be destroyed." He judged, that for a people debauched by prosperity, nothing was more to be feared than a rival state, always powerful, and now from its misfortunes grown wise and circumspect. He held it necessary to remove all dangers that could be apprehended from *without*, when the republic had *within* so many distempers threatening her destruction.

From the censor dignified and severe, the reader will not perhaps be displeased to turn his view upon Cato sociable and relaxed. For we should have a false notion of him, if we imagined that nothing but a sad austerity prevailed in his speech and behaviour. On the contrary, he was extremely free; and often with his friends at table intermixed the conversation with lively discourses and witty sayings. Of these Plutarch has collected a pretty large number; we shall relate but one, and make use of Balzac's paraphrase, and the preface with which he introduces it. "The very censors, though sadness seemed to be one of the functions of their office, did not altogether lay aside raillery. They were not always bent upon severity; and the first Cato, that troublesome and intolerable honest man, ceased sometimes to be troublesome and intolerable. He had some glimpses of mirth, and some intervals of good humour. He dropped now and then some words that were not unpleasant, and you may judge of the rest by this. He had married a very handsome wife; and history tells us that she was extremely afraid of the thunder, and loved her husband well. These two passions prompted her to the same thing; she always pitched upon her husband as a sanctuary against thunder, and threw herself into his arms at the first noise she fancied she heard in the sky. Cato, who was well pleased with the storm, and very willing to be caressed, could not conceal his joy. He revealed that domestic secret to his friends; and told them one day, speaking of his wife, "that she had found out a way to make him love bad weather; and that he never was so happy as when Jupiter was angry." It is worth observing, that this was during his censorship; when he degraded the senator Manlius, who would probably have been consul the year after, only for giving a kiss to his wife in the day time, and in the presence of his daughter. Cato.

Oeuvres diverses, p. 49.

Cato died in the year of Rome 604, aged 85. He wrote several works. 1. A Roman History. 2. Concerning the art of war. 3. Of rhetoric. 4. A treatise of husbandry. Of these, the last only is extant.

Cato, *Marcus Portius*, commonly called Cato *Minor*, or Cato of *Utica*, was great-grandson of Cato *the Censor*. It is said, that from his infancy he discovered by his speech, by his countenance, and even his childish sports and recreations, an inflexibility of mind; for he would force himself to go through with whatever he had undertaken, though the task was ill suited to his strength. He was rough towards those that flattered him, and quite untractable when threatened; was rarely seen to laugh, or even to smile; was not easily provoked to anger; but if once incensed, hard to be pacified. Sylla having had a friendship for the father of Cato, sent often for him and his brother, and talked familiarly with them. Cato, who was then about 14 years of age, seeing the heads of great men brought there, and observing the sighs of those that were present, asked his preceptor, "Why does no body kill this man?" Because, said the other, he is more feared than he is hated. The boy replied, Why then did you not give me a sword when you brought me hither, that I might have stabbed him, and freed my country from this slavery?

He learned the principles of the Stoic philosophy, which so well suited his character, under Antipater of Tyre, and applied himself diligently to the study of it. Eloquence he likewise studied, as a necessary means to defend the cause of justice, and he made a very considerable proficiency in that science. To increase his bodily strength, he inured himself to suffer the extremes of heat and cold; and used to make journeys on foot and bare-headed in all seasons. When he was sick, patience and abstinence were his only remedies: he shut himself up, and would see nobody till he was well. Though remarkably sober in the beginning of his

Cato. his life, making it a rule to drink but once after ſupper, and then retire, he inſenſibly contracted a habit of drinking more freely, and of ſitting at table till morning. His friends endeavoured to excuſe this, by ſaying that the affairs of the public engroſſed his attention all the day; and that, being ambitious of knowledge, he paſſed the night in the converſation of philoſophers. Cæſar wrote, that Cato was once found dead drunk at the corner of a ſtreet, early in the morning, by a great number of people who were going to the levee of ſome great man; and that when, by uncovering his face, they perceived who it was, they bluſhed for ſhame: "You would have thought (added Cæſar), that Cato had found them drunk, not they him." Pliny obſerves, that by this reflection Cæſar praiſes his enemy at the ſame time that he blames him. And Seneca, his extravagant panegyriſt, ventures to aſſert, that it is eaſier to prove drunkenneſs to be a virtue, than Cato to be vicious. He affected ſingularity; and in things indifferent, to act directly contrary to the taſte and faſhions of the age. Magnanimity and conſtancy are generally aſcribed to him; and Seneca would fain make that haughtineſs and contempt for others which, in Cato, accompanied thoſe virtues, a matter of praiſe. Cato, ſays Seneca, having received a blow in the face, neither took revenge nor was angry; he did not even *pardon the affront*, but *denied that he had received it*. His virtue raiſed him ſo high, that injury could not reach him. He is reputed to have been chaſte in his youth. His firſt love was Lepida; but when the marriage was upon the point of being concluded, Metellus Scipio, to whom ſhe had been promiſed, interfered, and the preference was given to him. This affront extremely exaſperated our ſtoic. He was for going to law with Scipio; and when his friends had diverted him from that deſign, by ſhowing him the ridicule of it, he revenged himſelf by making verſes upon his rival. When this firſt flame ſubſided, he married Attilia the daughter of Serranus, had two children by her, and afterwards divorced her for her very indiſcreet conduct.

He ſerved as a volunteer under Gallus in the war of Spartacus; and when military rewards were offered him by the commander, he refuſed them, becauſe he thought he had no right to them. Some years after, he went a legionary tribune into Macedonia under the prætor Rubrius: in which ſtation he appeared, in his dreſs, and during a march, more like a private ſoldier than an officer: but the dignity of his manners, the elevation of his ſentiments, and the ſuperiority of his views, ſet him far above thoſe who bore the titles of generals and proconſuls. It is ſaid, that Cato's deſign in all his behaviour was to engage the ſoldiers to the love of virtue; whoſe affections he engaged thereby to himſelf, without his having that in his intention. "For the ſincere love of virtue (adds Plutarch) implies an affection for the virtuous. Thoſe who praiſe the worthy without loving them, pay homage to their glory; but are neither admirers nor imitators of their virtues." When the time of his ſervice expired, and he was leaving the army, the ſoldiers were all in tears; ſo effectually had he gained their hearts by his condeſcending manners, and ſharing in their labours. After his return home, he was choſen to the queſtorſhip; and had ſcarce entered on his charge, when he made a great reformation in the queſtor's office, and particularly with regard to the regiſters. Theſe regiſters, whoſe places were for life, and through whoſe hands paſſed inceſſantly all the public accounts, being to act under young magiſtrates unexperienced in buſineſs, aſſumed an air of importance; and, inſtead of aſking orders from the queſtors, pretended to direct and govern as if they themſelves were the queſtors. Cato reduced them to their proper ſphere. Cato.

One thing by which Cato extremely pleaſed the people, was his making the aſſaſſins to whom Sylla had given conſiderable rewards out of the treaſury for murdering the proſcribed, diſgorge their gains. Plutarch tells us, that Cato was ſo exact in diſcharging the duties of a ſenator, as to be always the firſt who came to the houſe, and the laſt who left it; and that he never quitted Rome during thoſe days when the ſenate was to ſit. Nor did he fail to be preſent at every aſſembly of the people, that he might awe thoſe who, by an ill judged facility, beſtowed the public money in largeſſes, and frequently, through mere favour, granted remiſſion of debts due to the ſtate. At firſt his auſterity and ſtiffneſs diſpleaſed his colleagues; but afterwards they were glad to have his name to oppoſe to all the unjuſt ſolicitations, againſt which they would have found it difficult to defend themſelves. Cato very readily took upon him the taſk of refuſing.

Cato, to keep out a very bad man, put in for the tribunate. He ſided with Cicero againſt Catiline, and oppoſed Cæſar on that occaſion. His enemies ſent him to recover Cyprus, which Ptolemy had forfeited, thinking to hurt his reputation by ſo difficult an undertaking; yet none could find fault with his conduct.

Cato laboured to bring about an agreement between Cæſar and Pompey; but ſeeing it in vain, he ſided with the latter. When Pompey was ſlain he fled to Utica; and being purſued by Cæſar, adviſed his friends to be gone, and throw themſelves on Cæſar's clemency. His ſon, however, remained with him; and Statilius, a young man, remarkable for his hatred to Cæſar.

The evening before the execution of the purpoſe he had formed with regard to himſelf, after bathing, he ſupped with his friends and the magiſtrates of the city. They ſat late at table, and the converſation was lively. The diſcourſe falling upon this maxim of the Stoics, that "the wiſe man alone is free, and that the vitious are ſlaves;" Demetrius, who was a Peripatetic, undertook to confute it from the maxims of his ſchool. Cato in anſwer, treated the matter very amply; and with ſo much earneſtneſs and vehemence of voice, that he betrayed himſelf, and confirmed the ſuſpicions of his friends that he deſigned to kill himſelf. When he had done ſpeaking, a melancholy ſilence enſued; and Cato perceiving it, turned the diſcourſe to the preſent ſituation of affairs, expreſſing his concern for thoſe who had been obliged to put to ſea, as well as for thoſe who had determined to make their eſcape by land, and had a dry and ſandy deſert to paſs. After ſupper, the company being diſmiſſed, he walked for ſome time with a few friends, and gave his orders to the officers of the guard: and going into his chamber, he embraced his ſon and his friends with more than

uſual

uſual tenderneſs, which farther confirmed the ſuſpicions of the reſolution he had taken. Then laying himſelf down on his bed, he took up Plato's Dialogue on the Immortality of the Soul. Having read for ſome time, he looked up, and miſſing his ſword, which his ſon had removed while he was at ſupper, he called a ſlave, and aſked who had taken it away; and receiving no pertinent anſwer, he reſumed his reading. Some time after, he aſked again for his ſword; and, without ſhowing any impatience, ordered it to be brought to him: but, having read out the book, and finding nobody had brought him his ſword, he called for all his ſervants, fell into a rage, and ſtruck one of them on the mouth with ſo much violence that he very much hurt his own hand, crying out in a paſſionate manner, "What! do my own ſon and family conſpire to betray me, and deliver me up naked and unarmed to the enemy?" Immediately his ſon and friends ruſhed into the room; and began to lament, and to beſeech him to change his reſolution. Cato raiſing himſelf, and looking fiercely at them, "How long is it," ſaid he, "ſince I have loſt my ſenſes, and my ſon is become my keeper? Brave and generous ſon, why do you not bind your father's hands, that when Cæſar comes, he may find me unable to defend myſelf? Do you imagine that without a ſword I cannot end my life?" Cannot I deſtroy myſelf, by holding my breath for ſome moments, or by ſtriking my head againſt the wall?" His ſon anſwered with his tears, and retired. Apollonides and Demetrius remained with him; and to them he addreſſed himſelf in the following words: "Is it to watch over me that ye ſit ſilent here? Do you pretend to force a man of my years to live? or can you bring any reaſon to prove, that it is not baſe and unworthy of Cato to beg his ſafety of an enemy? or why do you not perſuade me to unlearn what I have been taught, that, rejecting all the opinions I have hitherto defended, I may now, by Cæſar's means, grow wiſer, and be yet more obliged to him than for life alone? Not that I have determined any thing concerning myſelf; but I would have it in my power to perform what I ſhall think fit to reſolve upon: and I ſhall not fail to aſk your counſel, when I have occaſion to act up to the principles which your philoſophy teaches. Go tell my ſon, that he ſhould not compel his father to what he cannot perſuade him." They withdrew, and the ſword was brought by a young ſlave. Cato drew it, and finding the point to be ſharp; "Now, (ſaid he), I am my own maſter:" And, laying it down, he took up his book again, which it is reported, he read twice over. After this he ſlept ſo ſoundly that he was heard to ſnore by thoſe who were near him. About midnight he called two of his freedmen, Cleanthes his phyſician, and Butas whom he chiefly employed in the management of his affairs. The laſt he ſent to the port, to ſee whether all the Romans were gone; to the phyſician he gave his hand to be dreſſed, which was ſwelled by the blow he had given his ſlave. This being an intimation that he intended to live, gave great joy to his family. Butas ſoon returned, and brought word that they were all gone except Craſſus, who had ſtaid upon ſome buſineſs, but was juſt ready to depart. He added, that the wind was high and the ſea rough. Theſe words drew a ſigh from Cato. He ſent Butas again to the port, to know whether there might not be ſome one, who, in the hurry of embarkation, had forgot ſome neceſſary proviſions, and had been obliged to put back to Utica. It was now break of day, and Cato ſlept yet a little more, till Butas returned to tell him, that all was perfectly quiet. He then ordered him to ſhut his door; and he flung himſelf upon his bed, as if he meant to finiſh his night's reſt; but immediately he took his ſword, and ſtabbed himſelf a little below his cheſt; yet not being able to uſe his hand ſo well by reaſon of the ſwelling, the blow did not kill him. It threw him into a convulſion, in which he fell from his bed, and overturned a table near it. The noiſe gave the alarm; and his ſon and the reſt of the family, entering the room, found him weltering in his blood, and his bowels half out of his body. The ſurgeon, upon examination, found that his bowels were not cut; and was preparing to replace them and bind up the wound, when Cato, recovering his ſenſes, thruſt the ſurgeon from him, and, tearing out his bowels, immediately expired, in the 48th year of his age.

By this raſh act, independent of all moral or religious conſiderations, he carried his patriotiſm to the higheſt degree of political phrenſy: for Cato, dead, could be of no uſe to his country: but had he preſerved his life, his counſel might have moderated Cæſar's ambition, and (as Monteſquieu obſerves) have given a different turn to public affairs.

CATOCHE, or CATOCHUS, a diſeaſe, by which the patient is rendered in an inſtant as immoveable as a ſtatue, without either ſenſe or motion, and continues in the ſame poſture he was in at the moment of his being ſeized. See MEDICINE *Index*.

CATOPTRICS.

CATOPTRICS is that part of optics which explains the properties of reflected light, and particularly that which is reflected from mirrors.

As this and the other branches of OPTICS will be fully treated under the collective word, we ſhall, in the preſent article, 1ſt, Juſt give a ſummary of the principles of the branch, in a few plain aphoriſms, with ſome preliminary definitions; and, 2dly, Inſert a ſet of entertaining experiments founded upon them.

1

SECT. I. *Definitions.*

1. Every poliſhed body that reflects the rays of light is called a mirror, whether its ſurface be plane, ſpherical, conical, cylindric, or of any other form whatever. 1 Definitions.

2. Of mirrors there are three principally uſed in optical experiments: The plane mirror, GHI, (fig. 1.); Plate CXXXVI.

1.): the ſpherical convex mirror, GHI, (fig. 2.); and the ſpherical concave mirror, GHI, (fig. 3.)

3. The point K, (fig. 2, 3.) round which the reflecting ſurface of a ſpherical mirror is deſcribed, is called its centre. The line KH, drawn from its centre perpendicular to its two ſurfaces, is the axis of the mirror; and the point H, to which that line is drawn, is its vortex.

4. The diſtance between the lines AG and BG, (fig. 1.) is called the angle of incidence, and the diſtance between BG and CG is the angle of reflection.

SECT. II. *Aphoriſms.*

2 I. In a plane mirror.

1. The image DF, (fig. 1.) will appear as far behind the mirror as the object AC is before it.

2. The image will appear of the ſame ſize, and in the ſame poſition as the object.

3. Every ſuch mirror will reflect the image of an object of twice its own length and breadth.

4. If the object be an opaque body, and its rays fall on the mirror nearly in direct lines, there will be only one image viſible, which will be reflected by the inner ſurface of the glaſs. But,

5. If the object be a luminous body, and its rays fall very obliquely on the mirror, there will appear to an eye placed in a proper poſition, ſeveral images; the firſt of which reflected from the outer ſurface of the glaſs, will not be ſo bright as the ſecond, reflected from the inner ſurface. The following images, that are produced by the repeated reflections of the rays between the two ſurfaces of the glaſs, will be in proportion leſs vivid, to the eighth or tenth, which will be ſcarce viſible.

3 II. In a ſpherical convex mirror.

1. The image D F, (fig. 2.), will always appear behind it.

2. The image will be in the ſame poſition as the object.

3. It will be leſs than the object.

4. It will be curved, but not, as the mirror, ſpherical.

5. Parallel rays falling on this mirror will have the focus or image at half the diſtance of the centre K from the mirror.

6. In converging rays, the diſtance of the object muſt be equal to half the diſtance of the centre, to make the image appear behind the mirror.

7. Diverging rays will have their image at leſs than half the diſtance of the centre. If the object be placed in the centre of the mirror, its image will appear at one eighth of that diſtance behind it.

4 III. In a ſpherical concave mirror.

1. That point where the image appears of the ſame dimenſions as the object, is the centre of that mirror.

2. Parallel rays will have their focus at one half the diſtance of the centre.

3. Converging rays will form an image before the mirror.

4. In diverging rays, if the object be at leſs than one-half the diſtance of the centre, the image will be behind the mirror, erect, curved, and magnified, as DEF, (fig. 3.) but if the diſtance of the object be greater, the image will be before the mirror, inverted and diminiſhed, as DEF, (fig. 4.)

5. The ſun's rays falling on a concave mirror, and being parallel, will be collected in a focus at half the diſtance of its centre, where their heat will be augmented in proportion of the ſurface of the mirror to that of the focal ſpot.

6. If a luminous body be placed in the focus of a concave mirror, its rays being reflected in parallel lines, will ſtrongly enlighten a ſpace of the ſame dimenſion with the mirror, at a great diſtance. If the luminous object be placed nearer than the focus, its rays will diverge, and conſequently enlighten a larger ſpace. It is on this principle that reverberators are conſtructed.

IV. In all plane and ſpherical mirrors the angle of incidence is equal to the angle of reflection.

SECT. III. *Entertaining Experiments.*

5 I. Catoptrical illuſions.

I. Of all our ſenſes the ſight is certainly ſubject to the greateſt illuſion. The various writers on optics have deſcribed a great number of inſtances in which it deceives us, and have conſtantly endeavoured to inveſtigate the cauſes, to explain their effects, and to reconcile appearance with reality. We every day diſcover new phenomena, and doubtleſs many more are reſerved for poſterity. It frequently happens, moreover, that a diſcovery which at firſt ſeemed of little conſequence has led to matters of the higheſt importance.

Take a glaſs bottle A (fig. 14.) and fill it with water to the point B; leave the upper part BC empty, and cork it in the common manner. Place this bottle oppoſite a concave mirror, and beyond its focus, that it may appear reverſed, and before the mirror (ſee Sect. II. aph. 3. 4. of a ſpher. concave mirror,) place yourſelf ſtill further diſtant from the bottle, and it will appear to you in the ſituation, *a*, *b*, *c*, (fig. 15.)

Now it is remarkable in this apparent bottle, that the water, which, according to all the laws of catoptrics, and all the experiments made on other objects, ſhould appear at *a b*, appears on the contrary at *b c*, and conſequently the part *a b* appears empty.

If the bottle be inverted and placed before the mirror (as in fig. 16.), its image will appear in its natural erect poſition; and the water, which is in reality at BC, will appear at *a b*.

If while the bottle is inverted it be uncorked, and the water run gently out, it will appear, that while the part BC, is emptying, that of *a b* in the image is filling; and what is likewiſe very remarkable, as ſoon as the bottle is empty the illuſion ceaſes, the image alſo appearing entirely empty. If the bottle likewiſe be quite full there is no illuſion.

If while the bottle is held inverted, and partly empty, ſome drops of water fall from the bottom A towards BC, it ſeems in the image as if there were formed at the bottom of that part *a b*, bubbles of air that roſe from *a* to *b*; which is the part that ſeems full of water. All theſe phenomena conſtantly appear.

The remarkable circumſtances in this experiment are, firſt, not only to ſee an object where it is not, but alſo where the image is not; and ſecondly, that of two objects which are really in its ſame place, as the ſurface at one place, and the other at another; and to ſee the bottle in the place of its image, and the water where neither it nor its image are.

II. Conſtruct a box AB, of about a foot long, eight inches

6
II. Appearance of a boundleſs viſta, fig. 5.

inches wide, and ſix high; or what other dimenſion you ſhall think fit, provided it does not greatly vary from theſe proportions.

On the inſide of this box, and againſt each of its oppoſite ends A and B, place a mirror of the ſame ſize. Take off the quickſilver from the mirror that you place at B, for about an inch and a half, at the part C, where you are to make a hole in the box of the ſame ſize, by which you may eaſily view its inſide. Cover the top of the box with a frame, in which muſt be placed a tranſparent glaſs, covered with gauze, on the ſide next the inner part of the box. Let there be two groves at the parts E and F to receive the two painted ſcenes hereafter mentioned. On two pieces of cut paſteboard let there be ſkilfully painted on both ſides (ſee fig. 6. and 7.) any ſubject you think proper; as woods, gardens, bowers, colonnades, &c. and on two other paſteboards, the ſame ſubjects on one ſide only; obſerving that there ought to be on one of them ſome object relative to the ſubject placed at A, that the mirror placed at D may not reflect the hole at C on the oppoſite ſide.

Place the two boards painted on both ſides in the grooves E and F; and thoſe that are painted on one ſide only againſt the oppoſite mirrors C and D; and then cover the box with its tranſparent top. This box ſhould be placed in a ſtrong light to have a good effect.

When the eye is placed at C, and views the objects on the inſide of the box, of which ſome, as we have ſaid, are painted on both ſides, they are ſucceſſively reflected from one mirror to the other; and if, for example, the painting conſiſts of trees, they will appear like a very long viſta, of which the eye cannot diſcern the end: for each of the mirrors repeating the objects, continually more faintly, contribute greatly to augment the illuſion.

7
III. Of a fortification of immenſe extent, fig. 8.

III. Take a ſquare box ABCD, of about ſix inches long, and twelve high; cover the inſide of it with four plane mirrors, which muſt be placed perpendicular to the bottom of the box CHFD.

Place certain objects in relief on the bottom of this box; ſuppoſe, for example, a piece of fortification, (as fig. 9.) with tents, ſoldiers, &c. or any other ſubject that you judge will produce an agreeable effect by its diſpoſition when repeatedly reflected by the mirrors.

On the top of this box place a frame of glaſs, in form of the bottom part of a pyramid, whoſe baſe AGEB is equal to the ſize of the box: its top ILN muſt form a ſquare of ſix inches, and ſhould not be more than four or five inches higher than the box. Cover the four ſides of this frame with a gauze, that the inſide may not be viſible but at the top ILN, which ſhould be covered with a tranſparent glaſs.

When you look into this box through the glaſs LN, the mirrors that are diametrically oppoſite each ther, mutually reflecting the figures encloſed, the eye beholds a boundleſs extent, completely covered with theſe objects; and if they are properly diſpoſed, the illuſion will occaſion no ſmall ſurpriſe, and afford great entertainment.

Note, The nearer the opening ILN is to the top of the box, the greater will be the apparent extent of the

ſubject. The ſame will happen if the four mirrors placed on the ſides of the box be more elevated. The objects, by either of theſe diſpoſitions, will appear to be repeated nine, twenty-five, forty-nine times, &c. by taking always the ſquare of the odd numbers of the arithmetical progreſſion 3, 5, 7, 9, &c. as is very eaſy to conceive, if we remember that the ſubject encloſed in the box is always in the centre of a ſquare, compoſed of ſeveral others, equal to that which forms the bottom of the box.

Other pieces of the ſame kind (that is, viewed from above) may be contrived in which mirrors may be placed perpendicular on a triangular, pentagon, or hexagon, (that is, a three, five, or ſix ſided) plane. All theſe different diſpoſitions, properly directed, as well with regard to the choice as poſition of the objects, will conſtantly produce very remarkable and pleaſing illuſions.

If inſtead of placing the mirrors perpendicular, they were to incline equally, ſo as to form part of a reverſed pyramid, the ſubject placed in the box would then have the appearance of a very extenſive globular or many-ſided figure.

IV. On the hexagonal or ſix-ſided plane ABCDEF draw ſix ſemi-diameters GA, GB, GC, GD, GE, GF; and on each of theſe place perpendicularly two plane mirrors, which muſt join exactly at the centre G, and which placed back to back muſt be as thin as poſſible. Decorate the exterior boundary of this piece (which is at the extremity of the angles of the hexagon) with ſix columns, that at the ſame time ſerve to ſupport the mirrors, by grooves formed on their inner ſides. (See the profile H). Add to theſe columns their entablatures, and cover the edifice in ſuch manner as you ſhall think proper.

8
IV. Surpriſing multiplication of objects, fig. 10.

In each one of theſe ſix triangular ſpaces, contained between two mirrors, place little figures of paſteboard, in relief, repreſenting ſuch objects as when ſeen in a hexagonal form will produce an agreeable effect. To theſe add ſmall figures of enamel; and take particular care to conceal, by ſome object that has relation to the ſubject, the place where the mirrors join, which, as we have ſaid before, all meet in the common centre G.

When you look into any one of the ſix openings of this palace, the objects there contained being repeated ſix times, will ſeem entirely to fill up the whole of the building. This illuſion will appear very remarkable; eſpecially if the objects made choice of are properly adapted to the effect that is to be produced by the mirrors.

Note, If you place between two of theſe mirrors part of a fortification, as a curtain and two demi-baſtions, you will ſee an entire citadel, with its ſix baſtions. Or if you place part of a ball room, ornamented with chandeliers and figures in enamel, all thoſe objects being here multiplied, will afford a very pleaſing proſpect.

9
V. Opaque bodies ſeemingly rendered tranſparent, fig. 11.

V. Within the caſe ABCD, place your mirrors, O, P, Q, R, ſo diſpoſed that they may each of them make an angle of forty-five degrees, that is, that they may be half way inclined from the perpendicular, as in the figure. In each of the two extremities AB, mak a circular overture, in one of which fix the tube GL,

GL, in the other the tube MF, and obſerve that in each of theſe is to be inſerted another tube, as H and I (A).

Furniſh the firſt of theſe tubes with an object-glaſs at G, and a concave eye-glaſs at F. You are to obſerve, that in regulating the focus of theſe glaſſes, with regard to the length of the tube, you are to ſuppoſe it equal to the line G, or viſual pointed ray, which entering at the overture G, is reflected by the four mirrors, and goes out at the other aperture F, where the ocular glaſs is placed. Put any glaſs you will into the two ends of the moveable tubes H and I; and laſtly, place the machine on a ſtand E, moveable at the point S, that it may be elevated or depreſſed at pleaſure.

When the eye is placed at F, and you look through the tube, the rays of light that proceed from the object T, paſſing through the glaſs G, are ſucceſſively reflected by the mirrors O, P, Q, and R, to the eye at F, and there paint the object T, in its proper ſituation, and theſe rays appear to proceed directly from that object.

The two moveable tubes H and I, at the extremities of each of which a glaſs is placed, ſerve only the more to diſguiſe the illuſion, for they have no communication with the interior part of the machine. This inſtrument being moveable on the ſtand E, may be directed to any object; and if furniſhed with proper glaſſes will anſwer the purpoſe of a common perſpective.

The two moveable tubes H and I being brought together, the machine is directed toward any object, and deſiring a perſon to look in at the end F, you aſk him if he ſees diſtinctly that object. You then ſeparate the two moveable tubes, and leaving a ſpace between them ſufficient to place your hand, or any other ſolid body; you tell him that the machine has the power of making objects viſible through the moſt opaque body; and as a proof you deſire him then to look at the ſame object, when to his great ſurpriſe, he will ſee it as diſtinct as when there was no ſolid body placed between the tubes.

Note, This experiment is the more extraordinary, as it is very difficult to conceive how the effect is produced. The two arms of the caſe appearing to be made to ſupport the perſpective glaſs; and to whatever object it is directed, the effect is ſtill the ſame.

10 VI. VII. The magician's mirrors, fig. 12.

VI. In the partition AB, make two apertures, CD, and EF, of a foot high, and ten inches wide, and about a foot diſtant from each other. Let them be at the common height of a man's head; and in each of them place a tranſparent glaſs, ſurrounded with a frame, like a common mirror.

Behind this partition place two mirrors H and I, inclined to it in an angle of forty-five degrees; that is, half way between a line drawn perpendicular to the ground and its ſurface; let them be both 18 inches ſquare: let all the ſpace between them be encloſed, by boards or paſteboard painted black, and well cloſed, that no light may enter: let there be alſo two curtains to cover them, which may be drawn aſide at pleaſure.

When a perſon looks into one of theſe ſuppoſed mirrors, inſtead of ſeeing his own face, he will perceive the object that is in front of the other; ſo that if two perſons preſent themſelves at the ſame time before theſe mirrors, inſtead of each one ſeeing himſelf, they will reciprocally ſee each other.

Note, There ſhould be a ſconce with a candle placed on each ſide of the two glaſſes in the wainſcot, to enlighten the faces of the perſons who look in them, otherwiſe this experiment will have no remarkable effect.

This experiment may be conſiderably improved by placing the two glaſſes in the partition in adjoining rooms, and a number of perſons being previouſly placed in one room, when a ſtranger enters the other, you may tell him his face is dirty; and deſire him to look in the glaſs, which he will naturally do; and on ſeeing a ſtrange face he will draw back; but returning to it, and ſeeing another, another, and another, like the phantom kings in Macbeth, what his ſurpriſe will be is more eaſy to conceive than expreſs. After this, a real mirror may be privately let down on the back of the glaſs; and if he can be prevailed to look in it once more, he will then, to his further aſtoniſhment, ſee his own face; and may be told, perhaps perſuaded, that all he thought he ſaw before was the mere effect of imagination.

How many tricks, leſs artful than this, have paſſed in former times for ſorcery; and paſs at this time, in ſome countries, for apparitions!

Note, When a man looks in a mirror that is placed perpendicular to another, his face will appear entirely deformed. If the mirror be a little inclined, ſo as to make an angle of 80 degrees (that is, one-ninth part from the perpendicular), he will then ſee all the parts of his face, except the noſe and forehead. If it be inclined to 60 degrees (that is, one-third part), he will appear with three noſes and ſix eyes: in ſhort, the apparent deformity will vary at each degree of inclination; and when the glaſs comes to 45 degrees (that is, half-way down), the face will vaniſh. If, inſtead of placing the two mirrors in this ſituation, they are ſo diſpoſed that their junction may be vertical, their different inclinations will produce other effects; as the ſituation of the object relative to theſe mirrors is quite different. The effects of theſe mirrors, though remarkable enough, occaſions but little ſurpriſe, as there is no method of concealing the cauſe by which they are produced.

11 VII. Make a box of wood, of a cubical figure, Fig. 13. ABCD, of about 15 inches every way. Let it be fixed to the pedeſtal P, at the uſual height of a man's head. In each ſide of this box, let there be an open-

(A) Theſe four tubes muſt terminate in the ſubſtance of the caſe, and not enter the inſide, that they may not hinder the effect of the mirrors. The fourfold reflection of the rays of light from the mirrors, darkens in ſome degree the brightneſs of the object; ſome light is alſo loſt by the magnifying power of the perſpective: If, therefore, inſtead of the object-glaſs at G, and concave eye-glaſs at F, plain glaſſes were ſubſtituted; the magnifying power of the perſpective will be taken away, and the object appear brighter.

ing of an oval form, of ten inches high, and ſeven wide.

In this box place two mirrors A, D, with their backs againſt each other; let them croſs the box in a diagonal line, and in a vertical poſition. Decorate the openings in the ſides of this box with four oval frames and tranſparent glaſſes, and cover each of them with a curtain, ſo contrived that they may all draw up together.

Place four perſons in front of the four ſides, and at equal diſtances from the box, and then draw up the curtains that they may ſee themſelves in the mirrors; when each of them, inſtead of his own figure, will ſee that of the perſon who is next him, and who, at the ſame time, will ſeem to him to be placed on the oppoſite ſide. Their confuſion will be the greater, as it will be very difficult for them to diſcover the mirrors concealed in the box. The reaſon of his phenomenon is evident; for though the rays of light may be turned aſide by a mirror, yet, as we have before ſaid, they always appear to proceed in right lines.

12 VIII. The perſpective mirror, fig. 17.

VIII. Provide a box ABCD of about two feet long, 15 inches wide, and 12 inches high. At the end AC place a concave mirror, the focus of whoſe parallel rays is at 18 inches from the reflecting ſurface. At IL place a paſteboard blacked, in which a hole is cut ſufficiently large to ſee on the mirror H the object placed at BEFD.

Cover the top of the box, from A to I, cloſe, that the mirror H may be entirely darkened. The other part IB muſt be covered with a glaſs, under which is placed a gauze.

Make an aperture at G, near the top of the ſide EB; beneath which, on the inſide, place, in ſucceſſion, paintings of different ſubjects, as viſtas, landſcapes, &c. ſo that they may be in front of the mirror H. Let the box be ſo placed that the object may be ſtrongly illuminated by the ſun, or by wax lights placed under the encloſed part of the box AI.

By this ſimple conſtruction the objects placed at GD will be thrown into their natural perſpective; and if the ſubjects be properly choſen, the appearance will be altogether as pleaſing as in optical machines of a much more complicated form.

Note, A glaſs mirror ſhould be always here uſed, as thoſe of metal do not repreſent the objects with equal vivacity, and are beſide ſubject to tarniſh. It is alſo neceſſary that the box be ſufficiently large, that you may not be obliged to uſe a mirror whoſe focus is too ſhort; for in that caſe, the right lines near the border of the picture will appear bent in the mirror, which will have a diſagreeable effect, and cannot be avoided.

13 IX. To ſet fire to a combuſtible body by the reflection of two concave mirrors, fig. 18.

IX. The rays of a luminous body placed in the focus of a concave mirror being reflected in parallel lines, if a ſecond mirror be placed diametrically oppoſite the firſt, it will, by collecting thoſe rays in its focus, ſet fire to a combuſtible body.

Place two concave mirrors, A and B, at about 12 or 15 feet diſtance from each other, and let the axis of each of them be in the ſame line. In the focus C of one of them, place a live coal, and in the focus D of the other ſome gunpowder. With a pair of double bellows, which make a continual blaſt, keep conſtantly blowing the coal, and notwithſtanding the diſtance between them, the powder will preſently take fire.

It is not neceſſary that theſe mirrors be of metal or braſs, thoſe made of wood or paſteboard gilded, will produce the exploſion, which has ſometimes taken effect at the diſtance of 50 feet, when mirrors of 18 inches, or two feet diameter, have been uſed.

This experiment ſucceeds with more difficulty at great diſtances; which may proceed from the moiſture in a large quantity of air. It would doubtleſs take effect more readily, if a tin tube, of an equal diameter with the mirrors, were to be placed between them.

14 The real apparition, fig. 19.

X. Behind the partition AB, place, in a poſition ſomething oblique, the concave mirror EF, which muſt be at leaſt ten inches in diameter, and its diſtance from the partition equal to three-fourths of the diſtance of its centre.

In the partition make an opening of ſeven or eight inches, either ſquare or circular: it muſt face the mirror, and be of the ſame height with it. Behind this partition place a ſtrong light, ſo diſpoſed that it may not be ſeen at the opening, and may illumine an object placed at C, without throwing any light on the mirror.

Beneath the aperture in the partition place the object C, that you intend ſhall appear on the outſide of the partition, in an inverted poſition; and which we will ſuppoſe to be a flower. Before the partition, and beneath the aperture, place a little flowerpot D, the top of which ſhould be even with the bottom of the aperture, that the eye, placed at G, may ſee the flower in the ſame poſition as if its ſtalk came out of the pot.

Take care to paint the ſpace between the back part of the partition and the mirror black, to prevent any reflections of light from being thrown on the mirror; in a word, ſo diſpoſe the whole that it may be as little enlightened as poſſible.

When a perſon is placed at the point G, he will perceive the flower that is behind the partition, at the top of the pot at D; but on putting out his hand to pluck it, he will find that he attempts to graſp a ſhadow.

If in the opening of the partition a large double convex lens of a ſhort focus be placed, or, which is not quite ſo well, a bottle of clear water, the image of the flower reflected thereon will appear much more vivid and diſtinct.

Obſervations.

The phenomena that may be produced by means of concave mirrors are highly curious and aſtoniſhing. By their aid, ſpectres of various kinds may be exhibited. Suppoſe, for example, a perſon with a drawn ſword places himſelf before a large concave mirror, but farther from it than its focus; he will then ſee an inverted image of himſelf in the air, between him and the mirror, of a leſs ſize than himſelf. If he ſteadily preſent the ſword towards the centre of the mirror, an image of the ſword will come out therefrom towards the ſword in his hand, point to point, as it were to fence with him; and by his puſhing the ſword nearer, the image will appear to come nearer him, and almoſt to touch his breaſt, having a ſtriking effect upon him. If the mirror be turned 45 degrees, or one-eighth round,

Fig. 1.

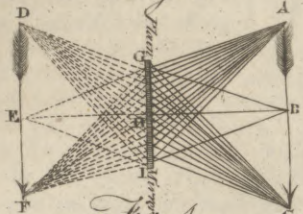


Fig. 2.

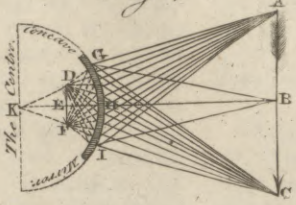


Fig. 3.

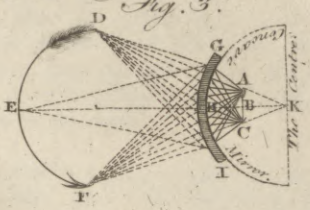


Fig. 8.

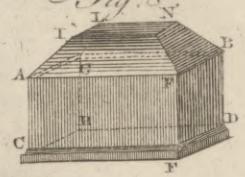


Fig. 4.

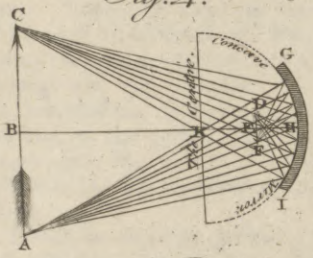


Fig. 7.

Fig. 6.

Fig. 9.

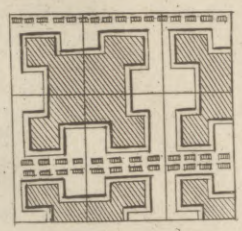


Fig. 5.

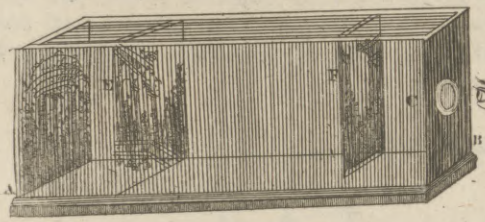


Fig. 11.

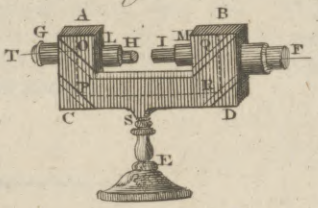


Fig. 10.

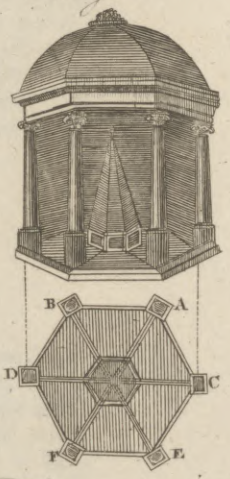


Fig. 12.

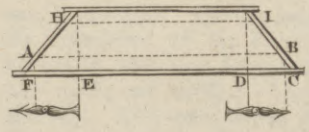


Fig. 13.

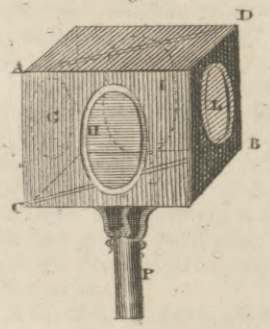


Fig. 14.

Fig. 15.

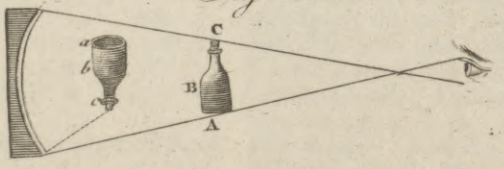
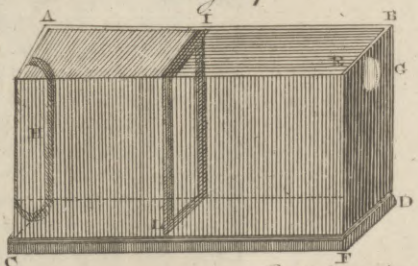


Fig. 17.



Cat head.

Fig. 16.

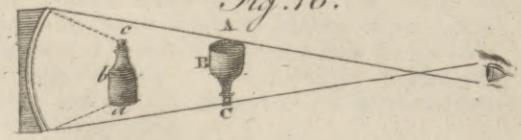


Fig. 18.

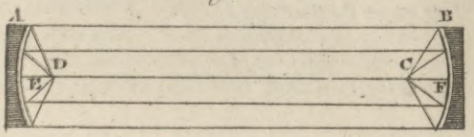
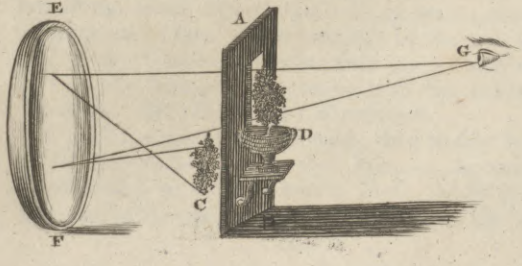
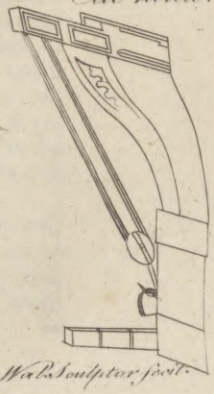


Fig. 19.





J. Walker Printseller & Sculptor fecit.

round, the reflected image will go out perpendicular to the direction of the ſword preſented, and apparently come to another perſon placed in the direction of the motion of the image. If that perſon is unacquainted with the experiment, and does not ſee the original ſword, he will be much ſurpriſed and alarmed. This experiment may be another way diverſified, by telling any perſon, that at ſuch an hour, and in ſuch a place, he ſhould ſee the apparition of an abſent or deceaſed friend (of whoſe portrait you are in poſſeſſion). In order to produce this phantom, inſtead of the hole in the partition AB in the laſt figure, there muſt be a door which opens into an apartment to which there is a conſiderable deſcent. Under that door you are to place the portrait, which muſt be inverted and ſtrongly illuminated, that it may be lively reflected by the mirror, which muſt be large and well poliſhed. Then having introduced the incredulous ſpectator at another door, and placed him in the proper point of view, you ſuddenly throw open the door at AB, when, to his great aſtoniſhment, he will immediately ſee the apparition of his friend.

It will be objected, perhaps, that this is not a perfect apparition, becauſe it is only viſible at one point of view, and by one perſon. But it ſhould be remembered, that it was an eſtabliſhed maxim in the laſt centuries, that a ſpectre might be viſible to one perſon and not to others. So Shakeſpeare makes both Hamlet and Macbeth ſee apparitions that were not viſible to others preſent at the ſame time. It is not unlikely, moreover, that this maxim took its riſe from certain apparitions of this kind that were raiſed by the monks, to ſerve ſome purpoſes they called religious; as they alone were in poſſeſſion of what little learning there then was in the world.

Opticians ſometimes grind a glaſs mirror concave in one direction only, as it is ſaid longitudinally; it is in fact a concave portion of a cylinder, the breadth of which may be conſidered that of the mirror. A perſon looking at his face in this mirror, in the direction of its concavity, will ſee it curiouſly diſtorted in a very lengthened appearance; and by turning the cylindrical mirror a quarter round, his viſage will appear diſtorted another way, by an apparent increaſe in width only. Another curious and ſingular property attends this ſort of mirrors: If in a very near ſituation before it, you put your finger on the right hand ſide of your noſe, it will appear the ſame in the mirror; but if in a diſtant ſituation, ſomewhat beyond the centre of concavity, you again look at your face in the mirror, your finger will appear to be removed to the other or left hand ſide of your noſe. This, though ſomething extraordinary, will in its cauſe appear very evident from a ſmall conſideration of the properties of ſpherical concave mirrors.

Catoptromancy || Catterthun.

CATOPTROMANCY, Κατοπτρομαντεια, a kind of divination among the ancients; ſo called, becauſe conſiſting in the application of a mirror. The word is formed from κατοπτρον, *ſpeculum*, "mirror," and μαντεια, *divinatio*, "divination." Pauſanias ſays, it was in uſe among the Achaians; where thoſe who were ſick, and in danger of death, let down a mirror, or looking glaſs faſtened by a thread, into a fountain before the temple of Ceres; then looking in the glaſs, if they ſaw a ghaſtly diſfigured face, they took it as a ſure ſign of death: on the contrary, if the fleſh appeared freſh and healthy, it was a token of recovery. Sometimes glaſſes were uſed without water, and the images of things future repreſented in them. See GASTROMANCY.

CATROU, FRANCIS, a famous Jeſuit, born at Paris in 1659. He was engaged for 12 years in the *Journal de Trevoux*, and applied himſelf at the ſame time to other works, which diſtinguiſhed him among the learned. He wrote a general Hiſtory of the Mogul empire, and a Roman hiſtory, in which he was aſſiſted by Father Rouille a brother Jeſuit. Catrou died in 1737; and this laſt hiſtory was continued by Rouille, who died in 1740.

CATTERTHUN, a remarkable Caledonian poſt a few miles north of the town of Brechin in the county of Angus in Scotland. Mr Pennant deſcribes it as of uncommon ſtrength. "It is (ſays he) of an oval form, made of a ſtupendous dike of looſe white ſtones, whoſe convexity, from the baſe within to that without, is 122 feet. On the outſide a hollow, made by the diſpoſition of the ſtones, ſurrounds the whole. Round the baſe is a deep ditch, and below that about 100 yards, are veſtiges of another, that went round the hill. The area within the ſtony mound is flat; the axis, or length of the oval, is 436 feet, the tranſverſe diameter 200. Near the eaſt ſide is the foundation of a rectangular building; and on moſt parts are the foundations of others ſmall and circular: all which had once their ſuperſtructures, the ſhelter of the poſſeſſors of the poſt: there is alſo a hollow, now almoſt filled with ſtones, the well of the place." There is another fortification, but of inferior ſtrength, in the neighbourhood. It is called the *Brown Catterthun*, from the colour of the ramparts, which are compoſed only of earth. It is of a circular form, and conſiſts of various concentric dikes. On one ſide of this riſes a ſmall rill, which, running down the hill, has formed a deep gully. From the ſide of the fortreſs is another rampart, which extends parallel to the rill, and then reverts, forming an additional poſt or retreat. The meaning of the word *Catter-thun* is *Camp-town*; and Mr Pennant thinks theſe might probably be the poſts occupied by the Caledonians before their engagement at the foot of the Grampian mountains with the celebrated Agricola. See (*Hiſtory of*) SCOTLAND.

Catti.

CATTI, a people of Germany, very widely ſpread, on the eaſt reaching to the river Sala, on the north to Weſtphalia; occupying, beſides Heſſe, the Wetterau, and part of the tract on the Rhine, and on the banks

Cattivellauni, Catullus.

of the river Lohne. The Hercynian foreſt began and ended in their country.

CATTIVELLAUNI, anciently a people of Britain, ſeated in the country which is now divided into the counties of Hertford, Bedford, and Bucks. The name of this ancient Britiſh people is written in ſeveral different ways by Greek and Roman authors, being ſometimes called Catti, Caſſii, Catticulcani, Cattidudani, Catticludani, &c. That they were of Belgic origin cannot be doubted, and it is not improbable that they derived their name of Catti from the Belgic word Katten, which ſignifies illuſtrious or noble, and that the addition of Vellauni, which means on the banks of rivers, might be given them after their arrival in Britain, as deſcriptive of the ſituation of their country. However this may be, the Cattivellauni formed one of the moſt brave and warlike of the ancient Britiſh nations when Cæſar invaded Britain, and long after. Caſſibelanus, their prince, was made commander in chief of the confederated Britons, not only on account of his own perſonal qualities, but alſo becauſe he was at the head of one of their braveſt and moſt powerful tribes. In the interval between the departure of Cæſar and the next invaſion under Claudius, the Cattivellauni had reduced ſeveral of the neighbouring ſtates under their obedience; and they again took the lead in oppoſition to the Romans at their ſecond invaſion, under their brave but unfortunate Prince Caractacus. The country of the Cattivellauni was much frequented and improved by the Romans, after it came under their obedience. Verulamium, their capital, which ſtood near where St Alban's now ſtands, became a place of great conſideration, was honoured with the name and privileges of a municipium or free city, and had magiſtrates after the model of the city of Rome. This place was taken and almoſt deſtroyed by the inſurgents under Boadicea; but it was afterwards rebuilt, reſtored to its former ſplendour; and ſurrounded with a ſtrong wall, ſome veſtiges of which are ſtill remaining. Durocobrivæ and Magiavintum, in the ſecond iter of Antoninus, were probably Dunſtable and Fenny Stratford, at which places there appear to have been Roman ſtations. The Salenæ of Ptolemy, a town in the country of the Cattivellauni, was perhaps ſituated at Salndy, in Bedfordſhire, where ſeveral Roman antiquities have been found. There were, beſides theſe, ſeveral other Roman forts, ſtations, and towns in this country, which it would be tedious to enumerate. The territories of the Cattivellanuni made a part of the Roman province called Britannia Prima.

CATTLE, a collective word, which ſignifies the fourfooted animals, which ſerve either for tilling the ground, or for food to man. They are diſtinguiſhed into large or black cattle; and into ſmall cattle: of the former are horſes, bulls, oxen, cows, and even calves, and heifers; amongſt the latter are rams, ewes, ſheep, lambs, goats, kids, &c. Cattle are the chief ſtock of a farm: they who deal in cattle are ſtyled graziers.

CATULLUS, Caius Valerius, a Latin poet, born at Verona, in the year of Rome 666. The harmony of his numbers acquired him the eſteem and friendſhip of Cicero, and other great men of his time. Many of his poems, however, abound with groſs obſcenities. He wrote ſatirical verſes againſt Cæſar, under the name of Marmoro. He ſpent his whole life in a ſtate of poverty; and died in the flower of his age, and the height of his reputation. Joſeph Scaliger, Paſſerat, Muret, and Iſaac Voſſius, have written learned notes on this poet.

Catz || Cavalcante.

CATZ, James, a great civilian, politician, and Dutch poet, was born at Browerſhaven, in Zealand, in the year 1577. After having made ſeveral voyages, he fixed at Middleburg; and acquired by his pleadings ſuch reputation, that the city of Dort choſe him for its penſionary; as did alſo, ſome time after, that of Middleburg. In 1634, he was nominated penſionary of Holland and Weſt Frieſland; and in 1648, he was elected keeper of the ſeal of the ſame ſtate, and ſtadtholder of the fiefs: but ſome time after, he reſigned theſe employments, to enjoy the repoſe which his advanced age demanded. As the poſt of grand penſionary had been fatal to almoſt all thoſe who had enjoyed it, from the beginning of the republic till that time, Catz delivered up his charge on his knees, before the whole aſſembly of the ſtates, weeping for joy, and thanking God for having preſerved him from the inconveniences that ſeemed attached to the duties of that office. But though he was reſolved to ſpend the reſt of his days in repoſe, the love of his country engaged him to comply with the deſires of the ſtate, who importuned him to go on an embaſſy to England, in the delicate conjuncture in which the republic found itſelf during the protectorate of Cromwell. At his return, he retired to his fine country ſeat at Sorgvliet, where he lived in tranquillity till the year 1660, in which he died. He wrote a great number of poems in Dutch; moſt of which are on moral ſubjects, and ſo eſteemed, that they have been often printed in all the different ſizes; and, next to the Bible, there is no work ſo highly valued by the Dutch.

CATZENELLIBOGEN, a town of Germany, in the lower part of the upper circle of the Rhine, with a ſtrong caſtle. It is capital of a county of the ſame name. E. Long. 7. 38. N. Lat. 50. 20.

CAVA, in *Anatomy*, the name of a vein, the largeſt in the body, terminating in the right ventricle of the heart. See Anatomy *Index*.

Cava, a conſiderable and populous town of Italy, in the kingdom of Naples, and in the Hither Principato, with a biſhop's ſee. It is ſituated at the foot of Mount Metelian, in E. Long. 15. 5. N. Lat. 40. 40.

CAVAILLAN, a town of France, in the department of Vaucluſe, and formerly a biſhop's ſee. It is ſituated on the river Durance, in a fertile and pleaſant country, and 20 miles ſouth-eaſt of Avignon. E. Long. 4. 17. N. Lat. 43. 52.

CAVALCADE, a formal pompous march or proceſſion of horſemen, equipages, &c. by way of parade, or ceremony, to grace a triumph, public entry, or the like.

CAVALCADOUR, or Cavalcadeur, anciently denoted a riding maſter; but at preſent is diſuſed in that ſenſe, and only employed to denote a ſort of equerries or officers who have the direction of princes ſtables. The French ſay, *ecuyer cavalcadeur* of the king, the duke of Orleans, &c. Menage writes it *cavalcadour*, and derives it from the Spaniſh *cavalgador*, a horſeman.

CAVALCANTE, Guido, a nobleman of Florence in

Cavalier || Cavalry.

in the 13th century, who having followed the party of the Guelphs, experienced the changeableneſs of fortune. He ſhowed great ſtrength of mind in his misfortunes, and never neglected to improve his talents. He wrote a treatiſe in Italian concerning ſtyle, and ſome verſes which are eſteemed. His poem on the love of this world has been commented on by ſeveral learned men.

CAVALIER, a horſeman, or perſon mounted on horſeback: eſpecially if he be armed withal, and have a military appearance.

Anciently the word was reſtrained to a knight, or *miles*. The French ſtill uſe *Chevalier* in the ſame ſenſe.

Cavalier, conſidered as a faction. See Britain, N° 109.

Cavalier, in fortification, an elevation of earth of different ſhapes, ſituated ordinarily in the gorge of a baſtion, bordered with a parapet, and cut into more or leſs embraſures, according to the capacity of the cavalier. Cavaliers are a double defence for the faces of the oppoſite baſtion: they defend the ditch, break the beſiegers galleries, command the traverſes in dry moats, ſcour the ſaliant angle of the counterſcarp, where the beſiegers have their counter batteries, and enfilade the enemy's trenches, or oblige them to multiply their parallels: they are likewiſe very ſerviceable in defending the breach and the retrenchments of the beſieged, and can very much incommode the intrenchments which the enemy make, being lodged in the baſtion.

Cavalier, in the manege, one that underſtands horſes, and is practiſed in the art of riding them.

CAVALIERI, Bonaventure, an eminent mathematician in the 17th century, a native of Milan, and a friar of the order of the Jeſuati of St Jerome, was profeſſor of the mathematics at Bologna, where he publiſhed ſeveral mathematical books, particularly the "Method of Indiviſibles." He was a ſcholar of Galileo. His *Directorium generale Uranometricum* contains great variety of moſt uſeful practices in trigonometry and aſtronomy. His trigonometrical tables in that work are excellent.

CAVALRY, a body of ſoldiers that charge on horſeback. The word comes from the French, *cavalerie*, and that from the corrupt Latin, *caballus*, a horſe.

The Roman cavalry conſiſted wholly of thoſe called *equites*, or knights, who were a diſtinct order in the diſtribution of citizens.—The Grecian cavalry were divided into *cataphractæ* and *non cataphractæ*, i. e. into heavy and light armed.—Of all the Greeks, the Theſſalians excelled moſt in cavalry. The Lacedemonians, inhabiting a mountainous country, were but meanly furniſhed with cavalry, till, carrying their arms into other countries, they found great occaſion for horſes to ſupport and cover their foot. The Athenian cavalry, for a conſiderable time, conſiſted only of 96 horſemen: after expelling the Perſians out of Greece, they increaſed the number to 300; and afterwards to 1200, which was the higheſt pitch of the Athenian cavalry. The Turkiſh cavalry conſiſts partly of Spahis, and partly of horſemen raiſed and maintained by the Zaims and Timariots.

The chief uſe of the cavalry is to make frequent excurſions to diſturb the enemy, intercept his convoys, and deſtroy the country: in battle to ſupport and cover the foot, and to break through and diſorder the enemy; alſo to ſecure the retreat of the foot. Formerly, the manner of fighting of the cavalry was, after firing their piſtols or carabines, to wheel off, to give opportunity for loading again. Guſtavus Adolphus is ſaid to have firſt taught the cavalry to charge through, to march ſtraight up to the enemy, with the ſword drawn in the bridle hand, and each man having fired his piece, at the proper diſtance, to betake himſelf to his ſword, and charge the enemy as was found moſt advantageous.

Cavan || Caudex.

CAVAN, a town of Ireland, and capital of a county of the ſame name, in the province of Ulſter, ſituated in W. Long. 6. 32. N. Lat. 54. 0.

Cavan, a county of Ireland, 47 miles in length, and 23 in breadth; is bounded on the eaſt by Monaghan, and on the ſouth by Longford, Weſt-Meath, and Eaſt-Meath. It has but two towns of any note, viz. Cavan and Kilmore. It ſends five members to parliament; two for the county, two for Cavan, and one for Kilmore. It contains upwards of 8000 houſes, 37 pariſhes, ſeven baronies, and two boroughs.

CAUCASUS, the name of a very high mountain of Aſia, being one of that great ridge which runs between the Black and Caſpian ſeas. Sir John Chardin deſcribes this as the higheſt mountain, and the moſt difficult to paſs, of any he had ſeen. It has frightful precipices, and in many places the roads are cut out of the ſolid rock. At the time he paſſed it, the mountain was entirely covered with ſnow; ſo that, in many places, his guides behoved to clear the way with ſhovels. The mountain is 36 leagues over, and the ſummit of it eight leagues in breadth. The top is perpetually covered with ſnow; and our traveller relates, that the two laſt days he ſeemed to be in the clouds, and was not able to ſee 20 paces before him. Excepting the very top, however, all the parts of Mount Caucaſus are extremely fruitful; abounding in honey, corn, fruits, hogs, and large cattle. The vines twine about the trees, and riſe ſo high, that the inhabitants cannot gather the fruit from the uppermoſt branches. There are many ſtreams of excellent water, and a vaſt number of villages. The inhabitants are for the moſt part Chriſtians of the Georgian church. They have fine complexions, and the women are very beautiful.—In the winter they wear ſnow ſhoes in the form of rackets, which prevent their ſinking in the ſnow, and enable them to run upon it with great ſwiftneſs.

CAUDEBEC, a rich, populous, and trading town, in Normandy, and capital of the territory of Caux. It is ſeated at the foot of a mountain near the river Seine, in E. Long. 0. 46. N. Lat. 40. 30.

CAUDEX, by Malpighi and other botaniſts, is uſed to ſignify the ſtem or trunk of a tree: by Linnæus, the ſtock or body of the root, part of which aſcends, part deſcends. The aſcending part raiſes itſelf gradually above ground, ſerving frequently for a trunk, and correſponds in ſome meaſure to the *caudex* of former writers: the deſcending part ſtrikes gradually downward into the ground, and puts forth radicles or ſmall fibres, which are the principal and eſſential part of every root. The deſcending caudex

Caudium, Cave.

dex therefore corresponds to the radix of other botaniſts. Agreeably to this idea, Linnæus conſiders trees and ſhrubs as roots above ground; an opinion which is confirmed by a well known fact, that trees, when inverted, put forth leaves from the deſcending caudex, and radicles or roots from the aſcending. For the varieties in the deſcending caudex, ſee the article RADIX.

CAUDIUM, in *Ancient Geography*, a town of Samnium, on the Via Appia, between Calatia and Beneventum: *Caudinus*, the epithet. The *Caudinae Furcae*, *Furcatae*, were memorable by the diſgrace of the Romans; being ſpears diſpoſed in the form of a gallows under which priſoners of war were made to paſs, and gave name to a defile or narrow paſs near *Caudium*, (Livy); where the Samnites obliged the Roman army and the two conſuls to lay down their arms and paſs under the gallows, or yoke, as a token of ſubjection.

CAVE, any large ſubterraneous hollow. Theſe were undoubtedly the primitive habitations, before men began to build edifices above ground. The primitive method of burial was alſo to repoſite the bodies in caves, which ſeems to have been the origin of catacombs. They long continued the proper habitations of ſhepherds. Among the Romans, *caves* (*antra*) uſed to be conſecrated to nymphs, who were worſhipped in caves, as other gods were in temples. The Perſians alſo worſhipped their god Mithras in a natural cave conſecrated for the purpoſe by Zoroaſter. The cave of the nymph Egeria is ſtill ſhown at Rome. Kircher, after Gaffarellus, enumerates divers ſpecies of caves; as divine, natural, &c.—Of natural caves ſome are poſſeſſed of a medicinal virtue, as the Grotto de Serpente; others are poiſonous or mephitical; ſome are replete with metalline exhalations, and others with waters. Divine caves were thoſe ſaid to affect the human mind and paſſions in various ways, and even to inſpire with a knowledge of future events. Such were the ſacred caverns at Delphi which inſpired the Pythia; the Sibyl's cave at Cumæ, ſtill ſhown near the lake Avernus; the cave of Trophonius, &c.

CAVE, *Dr William*, a learned Engliſh divine, born in 1637, educated in St John's College, Cambridge; and ſucceſſively miniſter of Haſely in Oxfordſhire, All-hallows the Great in London, and of Iſlington. He became chaplain to Charles II. and in 1684 was inſtalled a canon of Windſor. He compiled *the Lives of the Primitive Fathers in the three firſt Centuries of the Church*, which is eſteemed a very uſeful work; and *Hiſtoria Literaria*, &c. in which he gives an exact account of all who had written for or againſt Chriſtianity from the time of Chriſt to the 14th century: which works produced a very warm diſpute between Dr Cave and M. Le Clerc, who was then writing his *Bibliotheque Univerſelle* in Holland, and who charged the doctor with partiality. Dr Cave died in 1713.

CAVE, *Edward*, printer, celebrated as the projector of the *Gentleman's* MAGAZINE,—the firſt publication of the ſpecies, and ſince

The fruitful mother of a thouſand more,

was born in 1691. His father being diſappointed of ſome ſmall family expectations, was reduced to follow the trade of ſhoemaker at Rugby in Warwickſhire. The free ſchool of this place, in which his ſon had, by the rules of its foundation, a right to be inſtructed, was then in high reputation, under the Rev. Mr Holyock, to whoſe care moſt of the neighbouring families, even of the higheſt rank, intruſted their ſons. He had judgment to diſcover, and for ſome time generoſity to encourage, the genius of young Cave; and and was ſo well pleaſed with his quick progreſs in the ſchool, that he declared his reſolution to breed him for the univerſity, and recommend him as a ſervitor to ſome of his ſcholars of high rank. But proſperity which depends upon the caprice of others, is of ſhort duration. Cave's ſuperiority in literature exalted him to an invidious familiarity with boys who were far above him in rank and expectations; and, as in unequal aſſociations it always happens, whatever unlucky prank was played was imputed to Cave. When any miſchief, great or ſmall was done, though perhaps others boaſted of the ſtratagem when it was ſucceſsful, yet upon detection or miſcarriage, the fault was ſure to fall to poor Cave. The harſh treatment he experienced from this ſource, and which he bore for a while, made him at laſt leave the ſchool, and the hope of a literary education, to ſeek ſome other means of gaining a livelihood.

Cave.

He was firſt placed with a collector of the exciſe; but the inſolence of his miſtreſs, who employed him in ſervile drudgery, quickly diſguſted him, and he went up to London in queſt of more ſuitable employment. He was recommended to a timber merchant at the Bankſide: and while he was there on liking, is ſaid to have given hopes of great mercantile abilities: but this place he ſoon left; and was bound apprentice to Mr Collins, a printer of ſome reputation, and deputy alderman. This was a trade for which men were formerly qualified by a literary education, and which was pleaſing to Cave, becauſe it furniſhed ſome employment for his ſcholaſtic attainments. Here, therefore, he reſolved to ſettle, though his maſter and miſtreſs lived in perpetual diſcord, and their houſe was therefore no comfortable habitation. From the inconveniences of theſe domeſtic tumults he was ſoon releaſed, having in only two years attained ſo much ſkill in his art, and gained ſo much the confidence of his maſter, that he was ſent without any ſuperintendant to conduct a printing houſe at Norwich, and publiſh a weekly paper. In this undertaking he met with ſome oppoſition, which produced a public controverſy, and procured young Cave the reputation of a writer.

His maſter died before his apprenticeſhip was expired, and he was not able to bear the perverſeneſs of his miſtreſs. He therefore quitted her houſe upon a ſtipulated allowance, and married a young widow, with whom he lived at Bow. When his apprenticeſhip was over, he worked as a journeyman at the printing-houſe of Mr Barbar, a man much diſtinguiſhed and employed by the Tories, whoſe principles had at that time ſo much prevalence with Cave, that he was for ſome years a writer in Miſt's Journal. He afterwards obtained by his wife's intereſt a ſmall place in the poſt-office; but ſtill continued, at his intervals of attendance, to exerciſe his trade, or to employ himſelf with ſome typographical buſineſs. He corrected the *Gradus ad Parnaſſum;* and was liberally rewarded by the Company

Cave ‖ Caveat.

Company of Stationers. He wrote an Account of the Criminals, which had for ſome time a conſiderable ſale; and publiſhed many little pamphlets that accident brought into his hands, of which it would be very difficult to recover the memory. By the correſpondence which his place in the poſt-office facilitated, he procured a country newſpaper, and ſold their intelligence to a journaliſt in London for a guinea a-week. He was afterwards raiſed to the office of clerk of the franks, in which he acted with great ſpirit and firmneſs; and often ſtopped franks which were given by members of parliament to their friends, becauſe he thought ſuch extenſion of a peculiar right illegal. This raiſed many complaints; and the influence that was exerted againſt him procured his ejectment from office. He had now, however, collected a ſum ſufficient for the purchaſe of a ſmall printing office, and began the Gentleman's Magazine; an undertaking to which he owed the affluence in which he paſſed the laſt 20 years of his life, and the large fortune which he left behind him. When he formed the project, he was far from expecting the ſucceſs which he found; and others had ſo little proſpect of its conſequence, that though he had for ſeveral years talked of his plan among printers and bookſellers, none of them thought it worth the trial. That they were not (ſays Dr Johnſon) reſtrained by their virtue from the execution of another man's deſign, was ſufficiently apparent as ſoon as that deſign began to be gainful; for, in a few years, a multitude of magazines aroſe, and periſhed; only the London Magazine, ſupported by a powerful aſſociation of bookſellers, and circulated with all the art and all the cunning of trade, exempted itſelf from the general fate of Cave's invaders, and obtained though not an equal, yet a conſiderable ſale.

Cave now began to aſpire to popularity; and being a greater lover of poetry than any other art, he ſometimes offered ſubjects for poems, and propoſed prizes for the beſt performers. The firſt prize was 50l. for which, being but newly acquainted with wealth, and thinking the influence of 50l. extremely great, he expected the firſt authors of the kingdom to appear as competitors; and offered the allotment of the prize to the univerſities. But, when the time came, no name was ſeen among the writers that had been ever ſeen before; and the univerſities and ſeveral private men rejected the province of aſſigning the prize. The determination was then left to Dr Cromwell Mortimer and Dr Birch; and by the latter the award was made which may be ſeen in Gent. Mag. vol. vi. p. 59.

Mr Cave continued to improve his Magazine, and had the ſatisfaction of ſeeing its ſucceſs proportionate to his diligence, till in 1751, his wife died of an aſthma. He ſeemed not at firſt much affected by her death, but in a few days loſt his ſleep and his appetite, which he never recovered. After having lingered about two years, with many viciſſitudes of amendment and relapſe, he fell by drinking acid liquors into a diarrhœa, and afterwards into a kind of lethargic inſenſibility; and died Jan. 10. 1754, having juſt concluded the 23d annual collection.

CAVEARE. See CAVIARE.

CAVEAT, in *Law*, a kind of proceſs in the ſpiritual courts, to ſtop the proving of a will, the granting tithes of adminiſtration, &c. to the prejudice of another. It is alſo uſed to ſtop the inſtitution of a clerk to a benefice.

Caveating ‖ Cavendiſh.

CAVEATING, in *Fencing*, is the ſhifting the ſword from one ſide of that of your adverſary to the other.

CAVEDO, in *Commerce*, a Portugueſe long meaſure, equal to $27\frac{354}{1000}$ Engliſh inches.

CAVENDISH, THOMAS, of Suffolk, the ſecond Engliſhman that ſailed round the globe, was deſcended from a noble family in Devonſhire. Having diſſipated his fortune, he reſolved to repair it at the expence of the Spaniards. He ſailed from Plymouth with two ſmall ſhips in July 1586; paſſed through the ſtraits of Magellan; took many rich prizes along the coaſts of Chili and Peru; and near California, poſſeſſed himſelf of the St Ann, an Acapulco ſhip, with a cargo of immenſe value. He completed the circumnavigation of the globe, returning home round the Cape of Good Hope, and reached Plymouth again in September 1588. On his arrival, it is ſaid that his ſoldiers and ſailors were clothed in ſilk, his ſails were damaſk, and his topmaſt was covered with cloth of gold. His acquired riches did not laſt long: he reduced himſelf, in 1591, to the expedient of another voyage; which was far from being ſo ſucceſsful as the former; he went no farther than the ſtraits of Magellan, where the weather obliging him to return, he died of grief on the coaſt of Braſil.

CAVENDISH, *Sir William*, deſcended of an ancient and honourable family, was born about the year 1505, the ſecond ſon of Thomas Cavendiſh of Cavendiſh in Suffolk, clerk of the pipe in the reign of Henry VIII. Having had a liberal education, he was taken into the family of the great Cardinal Wolſey, whom he ſerved in the capacity of gentleman uſher of the chamber, when that ſuperb prelate maintained the dignity of a prince. In 1527, he attended his maſter on his ſplendid embaſſy to France, returned with him to England, and was one of the few who continued faithful to him in his diſgrace. Mr Cavendiſh was with him when he died, and delayed going to court till he had performed the laſt duty of a faithful ſervant by ſeeing his body decently interred. The king was ſo far from diſapproving of his conduct, that he immediately took him into his houſehold, made him treaſurer of his chamber, a privy counſellor, and afterwards conferred on him the order of knighthood. He was alſo appointed one of the commiſſioners for taking the ſurrender of religious houſes. In 1540, he was nominated one of the auditors of the court of augmentations, and ſoon after obtained a grant of ſeveral conſiderable lordſhips in Hertfordſhire. In the reign of Edward VI. his eſtates were much increaſed by royal grants in ſeven different counties; and he appears to have continued in high favour at court during the reign of Queen Mary. He died in the year 1557. He was the founder of Chatſworth, and anceſtor of the dukes of Devonſhire. He wrote "The life and death of Cardinal Wolſey:" printed at London in 1607; reprinted in 1706, under the title of "Memoirs of the great favourite Cardinal Wolſey."

CAVENDISH, *William*, duke of Newcaſtle, grandſon of Sir William Cavendiſh, was born in 1592. In 1610, he was made knight of the Bath; in 1620, raiſed to the dignity of a peer, by the title of Baron Ogle,

Cavendiſh. Ogle, and Viſcount Mansfield; and in the third year of King Charles I. created earl of Newcaſtle upon Tyne, and Baron Cavendiſh of Boleſover. He was after this made governor to the prince of Wales, afterwards Charles II. When the firſt troubles broke out in Scotland, and the king's treaſury was but indifferently provided, he contributed ten thouſand pounds, and alſo raiſed a troop of horſe, conſiſting of about two hundred knights and gentlemen, who ſerved at their own charge, were commanded by the earl, and honoured with the title of *the prince's troop*. He had after this the command of the northern counties; and was conſtituted general and commander in chief of all the forces that might be raiſed north of Trent, and of ſeveral counties ſouth of that river. He afterwards raiſed an army of eight thouſand horſe, foot, and dragoons; with which he took ſome towns, and gained ſeveral important victories. On this he was advanced to the dignity of marquis of Newcaſtle; but his majeſty's affairs being totally ruined by the raſhneſs of Prince Rupert, he, with a few of the principal officers of the army, went abroad, and ſtaid for ſome time at Paris; where, notwithſtanding the vaſt eſtate he had when the civil war broke out, his circumſtances were now ſo bad, that himſelf and wife were reduced to the neceſſity of pawning their clothes for a dinner. He afterwards removed to Antwerp, that he might be nearer his own country; and there, though under great difficulties, reſided for ſeveral years; but, notwithſtanding his diſtreſſes, he was treated, during an exile of eighteen years, with extraordinary marks of diſtinction. On his return to England at the Reſtoration, he was advanced to the dignity of earl of Ogle, and duke of Newcaſtle. He ſpent his time in a country retirement, and was the patron of men of merit. His grace died in 1670. aged 84. He wrote a treatiſe on horſemanſhip, which is eſteemed; and ſome comedies, which are not.

Mr Granger obſerves, that he was maſter of many accompliſhments, and was much better qualified for a court than a camp; that he underſtood horſemanſhip, muſic, and poetry; but was a better horſeman than muſician, and a better muſician than poet.

Cavendish *Margaret*, ducheſs of Newcaſtle, famous for her voluminous productions, was born about the latter end of the reign of James I. and was the youngeſt ſiſter of Lord Lucas of Colcheſter. She married the duke of Newcaſtle abroad in 1645; and on their return after the Reſtoration, ſpent the remainder of her life in writing plays, poems, with the life of her huſband, to the amount of about a dozen of folios. "What gives the beſt idea of her unbounded paſſion for ſcribbling (ſays Mr Walpole), was her ſeldom reviſing the copies of her works, leſt, as ſhe ſaid, it ſhould diſturb her following conceptions. She died in 1673.

Cavendish, *William*, the firſt duke of Devonſhire, and one of the moſt diſtinguiſhed patriots in the Britiſh annals, was born in 1640. In 1677, being then member for Derby, he vigorouſly oppoſed the venal meaſures of the court; and, the following year, was one of the committee appointed to draw up articles of impeachment againſt the Lord-treaſurer Danby. In 1679, being re-elected to ſerve for Derby in a new parliament, Charles II. thought fit to make him a privy counſellor; but he ſoon withdrew from the board, with his friend Lord Ruſſel, when he found that Popiſh intereſt prevailed. He carried up the articles of impeachment to the houſe of lords, againſt Lord-chief-juſtice Scroggs, for his arbitrary and illegal proceedings in the court of king's bench; and when the king declared his reſolution not to ſign the bill for excluding the duke of York (afterwards James II.), he moved the houſe of commons, that a bill might be brought in for the aſſociation of all his majeſty's Proteſtant ſubjects. He alſo openly named the king's evil counſellors, and voted for an addreſs to remove them from his preſence and councils for ever. He nobly appeared at Lord Ruſſel's trial, in defence of that great man, at a time when it was ſcarce more criminal to be an accomplice than a witneſs for him. The ſame fortitude, activity, and love of his country, animated this illuſtrious patriot to oppoſe the arbitrary proceedings of James II.; and when he ſaw there was no other method of ſaving the nation from impending ſlavery, he was the foremoſt in the aſſociation for inviting over the prince of Orange, and the firſt nobleman who appeared in arms to receive him at his landing. He was created duke of Devonſhire in 1694, by William and Mary. His laſt public ſervice was in the union with Scotland, for concluding of which he was appointed a commiſſioner by Queen Anne. He died in 1707, and ordered the following inſcription to be put on his monument.

Willielmus dux Devon,
Bonorum Principum Fidelis Subditus,
Inimicus et Inviſus Tyrannis,
William Duke of Devonſhire,
Of good Princes the faithful Subject,
The Enemy and Averſion of Tyrants.

Beſides being thus eſtimable for public virtues, his grace was diſtinguiſhed by his literary accompliſhments. He had a poetical genius, which ſhowed itſelf particularly in two pieces written with equal ſpirit, dignity, and delicacy: theſe are, an ode on the death of Queen Mary; and an Alluſion to the Archbiſhop of Cambray's Supplement to Homer. He had great knowledge in the languages, was a true judge in hiſtory, and a critic in poetry; he had a fine hand in muſic, an elegant taſte in painting, and in architecture had a ſkill equal to any perſon of the age in which he lived. His predeceſſor, Sir John Cavendiſh, was the perſon who killed the famous Watt Tyler in 1381.

CAVETTO, in *Architecture*, a hollow member, or round concave moulding, containing a quadrant of a circle, and having a quite contrary effect to that of a quarter round: it is uſed as an ornament in cornices.

CAVEZON, in the manege, a ſort of noſe band, either of iron, leather, or wood, ſometimes flat, and at other times hollow or twiſted, clapt upon the noſe of a horſe to wring it, and ſo forward the ſuppling and breaking of the horſe.

CAVIARE, a kind of food lately introduced into Britain. It is made of the hard roes of ſturgeon*, formed into ſmall cakes, about an inch thick and three or four inches broad. The method of making it is, by taking out of the ſpawn all the nerves or ſtrings, then waſhing it in white wine or vinegar, and ſpreading

* See *Acciperſer.*

Cavidos || Caul.

ing it on a table. It is then ſalted and preſſed in a fine bag; after which it is caſed up in a veſſel with a hole at the bottom, that if any moiſture is left it may run out. This kind of food is in great requeſt among the Muſcovites, on account of their three lents, which they keep with a ſuperſtitious exactneſs; wherefore the Italians ſettled at Moſcow drive a very great trade in this commodity throughout that empire, there being a prodigious quantity of ſturgeon taken at the mouth of the Wolga and other rivers which fall into the Caſpian ſea. A pretty large quantity of the commodity is alſo conſumed in Italy and France. They get the caviare from Archangel, but commonly buy it at ſecond hand of the Engliſh and Dutch.—According to Savary, the beſt caviare brought from Muſcovy is prepared from the belluga, a fiſh eight or ten feet long, caught in the Caſpian ſea, which is much preferable to that made of the ſpawn of ſturgeon. A kind of caviare, or rather ſauſage, is alſo made from the ſpawn of ſome other fiſhes; particularly a ſort of mullet caught in the Mediterranean. See MUGIL and BOTARGO.

CAVIDOS. See CABIDOS.

CAVIL (*cavillatio*), is defined by ſome a fallacious kind of reaſon, carrying ſome reſemblance of truth, which a perſon, knowing its falſehood, advances in diſpute for the ſake of victory. The art of framing ſophiſms or fallacies is called by Boethius *cavillatoria*.

CAUK, or CAWK. See BARYTES, CHEMISTRY and MINERALOGY *Index*.

CAUKING, or *CAULKING, of a Ship*, is driving a quantity of oakum, or old ropes untwiſted and drawn aſunder, into the ſeams of the planks, or into the intervals where the planks are joined together in the ſhip's decks or ſides, in order to prevent the entrance of water. After the oakum is driven very hard into theſe ſeams, it is covered with hot melted pitch or roſin, to keep the water from rotting it.

Among the ancients, the firſt who made uſe of pitch in caulking, were the inhabitants of Phæacia, afterwards called Corſica. Wax and roſin appear to have been commonly uſed previous to that period; and the Poles at this time uſe a ſort of unctuous clay for the ſame purpoſe, on their navigable rivers.

CAULKING Irons, are iron chiſſels for that purpoſe. Some of theſe irons are broad, ſome round, and others grooved. After the ſeams are ſtopped with oakum, it is done over with a mixture of tallow, pitch, and tar, as low as the ſhip draws water.

CAUL, in *Anatomy*, a membrane in the abdomen, covering the greateſt part of the guts; called, from its ſtructure, *Reticulum*, but moſt frequently *Omentum*. See ANATOMY *Index*.

CAUL is likewiſe a little membrane, found on ſome children, encompaſſing the head when born.

Drelincourt takes the *caul* to be only a fragment of the membranes of the fœtus; which ordinarily break at the birth of the child. Lampridius tells us, that the midwives ſold this *caul* at a good price to the advocates and pleaders of his time; it being an opinion, that while they had this about them, they ſhould carry with them a force of perſuaſion which no judge could withſtand: the canons forbid the uſe of it; becauſe ſome witches and ſorcerers, it ſeems, had abuſed it.

CAULIFLOWERS, in *Gardening*, a much eſteemed ſpecies of cabbage. See BRASSICA.

Cauliflowers || Cauſe.

CAURIS, in *Natural Hiſtory*, a name given by ſome to the genus of ſhells called, by the generality of writers, *porcellana*, and *concha veneræa*. It is from a falſe pronunciation of this word *cauris* that theſe ſhells are called *cowries*. See *PORCELAIN-Shell*, CONCHOLOGY *Index*.

CAURSINES (*Caurſini*), were Italians that came into England about the year 1235, terming themſelves *the Pope's merchants*, but driving no other trade than letting out money; and having great banks in England, they differed little from Jews, ſave (as hiſtory ſays) they were rather more mercileſs to their debtors. Some will have them called *Courſines*, quaſi *Cauſa Urſini*, beariſh or cruel in their cauſes; others *Caorſini* or *Corſini*, as coming from the iſle of Corſica: but Cowel ſays, they have their name from *Caorſium*, *Caorſi*, a town in Lombardy, where they firſt practiſed their arts of uſury and extortion; from whence ſpreading themſelves, they carried their infamous trade through moſt parts of Europe, and were a common plague to every nation where they came. The then biſhop of London excommunicated them; and King Henry III. baniſhed them from this kingdom in the year 1240. But, being the pope's ſolicitors and money-changers, they were permitted to return in the year 1250; though in a very ſhort time they were again driven out of the kingdom on account of their intolerable exactions.

CAUSA MATRIMONII PRÆLOCUTI, in common law, a writ that lies where a woman gives land to a man in fee to the intent he ſhall marry her, and he refuſes to do it in a reaſonable time, being thereupon required by the woman; and in ſuch caſe, for not performing the condition, the entry of the woman into the lands again has been adjudged lawful.

The huſband and wife may ſue this writ againſt another who ought to have married her.

CAUSALITY, among metaphyſicians, the action or power of a cauſe in producing its effect.

CAUSALTY, among miners, denotes the lighter, ſulphureous, earthy parts of ores, carried off in the operation of waſhing. This, in the mines, they throw in heaps upon banks, which in ſix or ſeven years they find it worth their while to work over again.

CAUSE, that from whence any thing proceeds, or by virtue of which any thing is done: it ſtands oppoſed to effect. We get the ideas of cauſe and effect from our obſervation of the viciſſitude of things, while we perceive ſome qualities or ſubſtances begin to exiſt, and that they receive their exiſtence from the due application and operation of other beings. That which produces, is the cauſe; and that which is produced, the effect: thus, fluidity in wax is the effect of a certain degree of heat, which we obſerve to be conſtantly produced by the application of ſuch heat.

Ariſtotle, and the ſchoolmen after him, diſtinguiſhed four kinds of cauſes; the efficient, the material, the formal, and the final. This, like many of Ariſtotle's diſtinctions, is only a diſtinction of the various meanings of an ambiguous word: for the efficient, the matter, the form, and the end, have nothing common in their nature, by which they may be accounted ſpecies of the ſame *genus*; but the Greek word, which we

Reid on the Active Powers of Man.

Cauſe. tranſlate *cauſe*, had theſe four different meanings in Ariſtotle's days, and we have added other meanings. We do not indeed call the matter or the form of a thing its cauſe; but we have final cauſes, inſtrumental cauſes, occaſional cauſes, and many others. Thus the word cauſe has been ſo hackneyed, and made to have ſo many different meanings in the writings of philoſophers, and in the diſcourſe of the vulgar, that its original and proper meaning is loſt in the crowd.

With regard to the phenomena of nature, the important end of knowing their cauſes, beſides gratifying our curioſity, is, that we may know when to expect them, or how to bring them about. This is very often of real importance in life; and this purpoſe is ſerved, by knowing what, by the courſe of nature, goes before them and is connected with them; and this, therefore, we call the *cauſe* of ſuch a phenomenon.

If a magnet be brought near to a mariner's compaſs, the needle, which was before at reſt, immediately begins to move, and bends its courſe towards the magnet, or perhaps the contrary way. If an unlearned ſailor is aſked the cauſe of this motion of the needle, he is at no loſs for an anſwer. He tells you it is the magnet; and the proof is clear: for, remove the magnet, and the effect ceaſes; bring it near, and the effect is again produced. It is, therefore, evident to ſenſe, that the magnet is the cauſe of this effect.

A Carteſian philoſopher enters deeper into the cauſe of this phenomenon. He obſerves, that the magnet does not touch the needle, and therefore can give it no impulſe. He pities the ignorance of the ſailor. The effect is produced, ſays he, by magnetic effluvia, or ſubtle matter, which paſſes from the magnet to the needle, and forces it from its place. He can even ſhow you, in a figure, where theſe magnetic effluvia iſſue from the magnet, what round they take, and what way they return home again. And thus he thinks he comprehends perfectly how, and by what cauſe, the motion of the needle is produced.

A Newtonian philoſopher inquires what proof can be offered for the exiſtence of magnetic effluvia, and can find none. He therefore holds it as a fiction, a hypotheſis; and he has learned that hypotheſis ought to have no place in the philoſophy of nature. He confeſſes his ignorance of the real cauſe of this motion, and thinks that his buſineſs as a philoſopher is only to find from experiment the laws by which it is regulated in all caſes.

Theſe three perſons differ much in their ſentiments with regard to the real cauſe of this phenomenon; and the man who knows moſt is he who is ſenſible that he knows nothing of the matter. Yet all the three ſpeak the ſame language, and acknowledge that the cauſe of this motion is the attractive or repulſive power of the magnet.

What has been ſaid of this, may be applied to every phenomenon that falls within the compaſs of natural philoſophy. We deceive ourſelves, if we conceive that we can point out the real efficient cauſe of any one of them.

The grandeſt diſcovery ever made in natural philoſophy, was that of the law of gravitation, which opens ſuch a view of our planetary ſyſtem, that it looks like ſomething divine. But the author of this diſcovery was perfectly aware that he diſcovered no real cauſe, but only the law or rule according to which the unknown cauſe operates. Cauſe.

Natural philoſophers, who think accurately, have a preciſe meaning to the terms they uſe in the ſcience; and when they pretend to ſhow the cauſe of any phenomenon of nature, they mean by the cauſe, a law of nature of which that phenomenon is a neceſſary conſequence.

The whole object of natural philoſophy, as Newton expreſsly teaches, is reducible to theſe two heads: firſt, by juſt induction from experiment and obſervation, to diſcover the laws of nature; and then to apply thoſe laws to the ſolution of the phenomena of nature. This was all that this great philoſopher attempted, and all that he thought attainable. And this indeed he attained in a great meaſure, with regard to the motions of our planetary ſyſtem, and with regard to the rays of light.

But ſuppoſing that all the phenomena which fall within the reach of our ſenſes were accounted for from general laws of nature juſtly deduced from experience; that is, ſuppoſing natural philoſophy brought to its utmoſt perfection; it does not diſcover the efficient cauſe of any one phenomenon in nature.

The laws of nature are the rules according to which the effects are produced; but there muſt be a cauſe which operates according to theſe rules. The rules of navigation never navigated a ſhip. The rules of architecture never built a houſe.

Natural philoſophers, by great attention to the courſe of nature, have diſcovered many of her laws, and have very happily applied them to account for many phenomena: but they have never diſcovered the efficient cauſe of any one phenomenon; nor do thoſe who have diſtinct notions of the principles of the ſcience make any ſuch pretence.

Upon the theatre of nature we ſee innumerable effects which require an agent endowed with active power; but the agent is behind the ſcene. Whether it be the Supreme cauſe alone, or a ſubordinate cauſe or cauſes; and if ſubordinate cauſes be employed by the Almighty, what their nature, their number, and their different offices may be; are things hid, for wiſe reaſons, without doubt, from the human eye.

CAUSE, among civilians, the ſame with action. See ACTION.

CAUSE, among phyſicians. The cauſe of a diſeaſe is defined by Galen to be that during the preſence of which we are ill, and which being removed, the diſorder immediately ceaſes. The doctrine of the cauſes of diſeaſes it called ETIOLOGY.

Phyſicians divide cauſes into procatarctic, antecedent, and continent.

Procatarctic CAUSE, (αιτια προκαταρκτικη), called alſo *primitive* and *incipient cauſe*, is either an occaſion which of its own nature does not beget a diſeaſe, but happening on a body inclined to diſeaſes breeds a fever, gout, &c. (ſuch as are watching, faſting, and the like); or an evident and manifeſt cauſe, which immediately produces the diſeaſe, as being ſufficient thereto, ſuch as is a ſword in reſpect of a wound.

Antecedent CAUSE, (αιτια προηγουμενη), a latent diſpoſition of the body, from whence ſome diſeaſe may ariſe; ſuch as a plethora in reſpect of a fever, a cacochymia in reſpect of a ſcurvy.

Continent,

Cauſe ‖ Cauſticity.

Continent, *Conjunct*, or *Proximate* CAUSE, that principle in the body which immediately adheres to the diſeaſe, and which being preſent, the diſeaſe is alſo preſent; or, which being removed, the diſeaſe is taken away: ſuch is the ſtone in a nephritic patient.

CAUSEWAY, or CAUSEY, a maſſive conſtruction of ſtones, ſtakes, and faſcines; or an elevation of fat viſcous earth, well beaten; ſerving either as a road in wet marſhy places, or as a mole to retain the waters of a pond, or prevent a river from overflowing the lower grounds. See ROAD.—The word comes from the French *chauſſée*, anciently wrote *chauſſée*; and that from the Latin *calceata*, or *calcata*; according to Somner and Spelman, *à calcando*. Bergier rather takes the word to have had its riſe *à peditum calceis*, *quibus teruntur*. Some derive it from the Latin *calx*, or French *chaux*, as ſuppoſing it primarily to denote a way paved with chalk ſtones.

CAUSEWAY, (*calcetum* or *calcea*), more uſually denotes a common hard raiſed way, maintained and repaired with ſtones and rubbiſh.

Devil's CAUSEWAY, a famous work of this kind, which ranges through the county of Northumberland, commonly ſuppoſed to be Roman, though Mr Horſley ſuſpects it to be of later times.

Giant's CAUSEWAY, is a denomination given to a huge pile of ſtony columns in the diſtrict of Coleraine in Ireland. See *GIANT's Cauſeway*.

CAUSSIN, NICHOLAS, ſurnamed the Juſt, a French Jeſuit, was born at Troyes in Champagne, in the year 1580; and entered into the Jeſuits order when he was 26 years of age. He taught rhetoric in ſeveral of their colleges, and afterwards began to preach, by which he gained very great reputation. He increaſed this reputation by publiſhing books, and in time was preferred to be confeſſor to the king. But he did not diſcharge this office to the ſatisfaction of Cardinal Richelieu, though he diſcharged it to the ſatisfaction of every honeſt man; and therefore it is not to be wondered at that he came at length to be removed. He died in the Jeſuits convent at Paris in 1651. None of his works did him more honour than that which he entitled *La Cour Sainte*. It has been printed a great many times; and tranſlated into Latin, Italian, Spaniſh, Portugueſe, German, and Engliſh. He publiſhed ſeveral other books both in Latin and French.

CAUSTICITY, a quality belonging to ſeveral ſubſtances, by the acrimony of which the parts of living animals may be corroded and deſtroyed. Bodies which have this quality, when taken internally, are true poiſons. The cauſticity of ſome of theſe, as of arſenic, is ſo deadly, that even their external uſe is proſcribed by prudent phyſicians. Several others, as nitrous acid, lapis infernalis or lunar cauſtic, common cauſtic, butter of antimony, are daily and ſucceſsfully uſed to conſume fungous fleſh, to open iſſues, &c. They ſucceed very well when properly employed and ſkillfully managed.

The cauſticity of bodies depends entirely on the ſtate of the ſaline, and chiefly of the acid, matters they contain. When theſe acids happen to be at the ſame time much concentrated, and ſlightly attached to the matters with which they are combined, they are then capable of acting, and are corroſive or cauſtic. Thus fixed and volatile alkalies, although they are themſelves cauſtic, become much more ſo by being treated with quicklime; becauſe this ſubſtance deprives them of all their fixed air, or carbonic acid to which they owe their mildneſs. By this treatment, then, the ſaline principle is more diſengaged, and rendered more capable of action. Alſo all combinations of metallic matters with acids form ſalts more or leſs corroſive, becauſe theſe acids are deprived of all their ſuperabundant water, and are beſides but imperfectly ſaturated with the metallic matters. Nevertheleſs, ſome other circumſtance is neceſſary to conſtitute the cauſticity of theſe ſaline metalline matters. For the ſame quantity of marine acid, which, when pure and diluted with a certain quantity of water, would be productive of no harm, ſhall, however, produce all the effects of a corroſive poiſon, when it is united with mercury in *corroſive ſublimate*, although the ſublimate ſhall be diſſolved in ſo much water that its cauſticity cannot be attributed to the concentration of its acid. This effect is, by ſome chemiſts, attributed to the great weight of the metallic matters with which the acid is united; and this opinion is very probable, ſeeing its cauſticity is nothing but its diſſolving power, or its diſpoſition to combine with other bodies; and this diſpoſition is nothing elſe than attraction. Cauſticity.

On this ſubject Dr Black obſerves, that the compounds produced by the union of the metals with acids are in general corroſive. Many of them applied to the ſkin deſtroy it almoſt as faſt as the mineral acids; and ſome of the moſt powerful potential cauteries are made in this way. Some are reckoned more acrid than the pure acids themſelves; and they have more powerful effects when taken internally, or at leaſt ſeem to have. Thus we can take 10 or 12 drops of a foſſil acid, diluted with water, without being diſturbed by it; but the ſame quantity of acid previouſly combined with ſilver, quickſilver, copper, or regulus of antimony, will throw the body into violent diſorders, or even prove a poiſon, if taken all at once.

This increaſed activity was, by the mechanical philoſophers, ſuppoſed to ariſe from the weight of the metallic particles. They imagined that the acid was compoſed of minute particles of the ſhape of needles or wedges; by which means they were capable of entering the pores of other bodies, ſeparating their atoms from each other, and thus diſſolving them. To theſe acid ſpiculæ the metallic particles gave more force; and the momentum of each particular needle or wedge was increaſed in proportion to its increaſe of gravity by the additional weight of the metallic particle. But this theory is entirely fanciful, and does not correſpond with facts. The activity of the compound is not in proportion to the weight of the metal; nor are the compounds always poſſeſſed of any great degree of acrimony: neither is it true that any of them have a greater power of deſtroying animal ſubſtances than the pure acids have.

There is a material difference between the powers called *ſtimuli* and *corroſives*. Let a perſon apply to any part of the ſkin a ſmall quantity of lunar cauſtic, and likewiſe a drop of ſtrong nitrous acid, and he will find that the acid acts with more violence than the cauſtic; and the diſorders that are occaſioned by the compounds of metals and acids do not proceed from a *cauſticity* in them, but from the metal affecting and proving a ſtimulus to the nerves: and that this is the

Cauſtics || Cautery.

caſe, appears from their affecting ſome particular nerves of the body. Thus the compounds of antimony and mercury with the vegetable acids, do not ſhow the ſmalleſt degree of acrimony; but, taken internally, they produce violent convulſive motions over the whole body, which are occaſioned by the metallic matter having a power of producing this effect; and the acid is only the means of bringing it into a diſſolved ſtate, and making it capable of acting on the nervous ſyſtem. In general, however, the compounds of metallic ſubſtances with acids may be conſidered as milder than the acids in a ſeparate ſtate; but the acid is not ſo much neutralized as in other compounds, for it is leſs powerfully attracted by the metal; ſo that alkaline ſalts, abſorbent earths, or even heat alone, will decompound them; and ſome of the inflammable ſubſtances, as ſpirit of wine, aromatic oils, &c. will attract the acid, and precipitate the metal in its metallic form: and the metals can be employed to precipitate one another in their metallic form; ſo that the coheſion of theſe compounds is much weaker than thoſe formed of the ſame acids with alkaline ſalts or earths.

CAUSTICS, is an appellation given to ſubſtances of ſo hot and fiery a nature, that, being applied, conſume, and as it were burn, the texture of the parts, like hot iron.

Cauſtics are generally divided into four ſorts; the common ſtronger cauſtic, the common milder cauſtic, the antimonial cauſtic, and the lunar cauſtic. See PHARMACY and CHEMISTRY *Index*.

Caustic Curve, in the higher geometry, a curve formed by the concourſe or coincidence of the rays of light reflected from ſome other curve.

CAUSUS, or BURNING FEVER, a ſpecies of continual fever, accompanied with a remarkable inflammation of the blood.

CAUTERIZATION, the act of burning or ſearing ſome morbid part, by the application of fire either actual or potential. In ſome places they cauterize with burning tow, in others with cotton or moxa, in others with live coals; ſome uſe Spaniſh wax, others pyramidal pieces of linen, others gold or ſilver; Severinus recommends flame blown through a pipe; but what is uſually preferred among us is a hot iron.

Cauterizing irons are of various figures; ſome flat, others round, ſome curved, &c. of all which we find draughts, in Albucaſis, Scultetus, Ferrara, and others. Sometimes a cautery is applied through a capſula, to prevent any terror from the ſight of it. This method was invented by Placentinus, and is deſcribed by Scultetus. In the uſe of all cauteries, care is to be taken to defend the neighbouring parts, either by a lamina, defenſive plaſter, or lint moiſtened in oxycrate. Sometimes the hot iron is tranſmitted through a copper cannula, for the greater ſafety of the adjoining parts. The degrees and manners of cauterizing are varied according to the nature of the diſeaſe and the part affected.

CAUTERY, in *Surgery*, a medicine for burning, eating, or corroding any ſolid part of the body.

Cauteries are diſtinguiſhed into two claſſes; actual and potential: by actual cauteries are underſtood red hot inſtruments, uſually of iron; and by potential cauteries are underſtood certain kinds of corroding medicines. See PHARMACY.

Caution || Cayenne.

CAUTION, in the *Civil* and *Scots Law*, denotes much the ſame with what, in the law of England, is called BAIL.

CAUTIONER, in *Scots Law*, that perſon who becomes bound for another to the performance of any deed or obligation. As to the different kinds and effects of Cautionry, ſee LAW, Part III. N° clxxv. 19.

CAWK. See CAUK.

CAXA, a little coin made of lead mixed with ſome ſcoria of copper, ſtruck in China, but current chiefly at Bantam in the iſland of Java, and ſome of the neighbouring iſlands. See (the *Table* ſubjoined to) MONEY.

CAXAMALCA, the name of a town and diſtrict of Peru in South America, where there was a moſt ſumptuous palace belonging to the Incas, and a magnificent temple dedicated to the ſun.

CAXTON, WILLIAM, a mercer of London, eminent by the works he publiſhed, and for being *reputed* the firſt who introduced and practiſed the art of printing in England; as to which, ſee (*the Hiſtory of*) PRINTING.

CAYENNE, a rich town and iſland of South America, and capital of the French ſettlements there, is bounded on the north by the Dutch colonies of Surinam, and ſituated in W. Long. 53. 10. N. Lat. 50.

This ſettlement was begun in 1645. A report had prevailed for ſome time before, that in the interior parts of Guiana, there was a country known by the name of *El Dorado*, which contained immenſe riches in gold and precious ſtones; more than ever Cortez and Pizarro had found in Mexico and Peru; and this fable had fired the imagination of every nation in Europe. It is ſuppoſed that this was the country in queſt of which Sir Walter Raleigh went on his laſt voyage; and as the French were not behind their neighbours in their endeavours to find out ſo deſirable a country, ſome attempts for this purpoſe were likewiſe made by that nation much about the ſame time; which at laſt coming to nothing, the adventurers took up their reſidence on the iſland of Cayenne. In 1643, ſome merchants of Rouen united their ſtock, with a deſign to ſupport the new colony; but, committing their affairs to one Poncet de Bretigny, a man of a ferocious diſpoſition, he declared war both againſt the coloniſts and ſavages, in conſequence of which he was ſoon maſſacred. This cataſtrophe entirely extinguiſhed the ardour of theſe aſſociates; and in 1651 a new company was eſtabliſhed. This promiſed to be much more conſiderable than the former; and they ſet out with ſuch a capital as enabled them to collect 700 or 800 coloniſts in the city of Paris itſelf. Theſe embarked on the Seine, in order to ſail down to Havre de Grace; but unfortunately the Abbé de Marivault, a man of great virtue, and the principal promoter of the undertaking, was drowned as he was ſtepping into his boat. Another gentleman, who was to have acted as general, was aſſaſſinated on his paſſage, and 12 of the principal adventurers who had promiſed to put the colony into a flouriſhing ſituation, not only were the principal perpetrators of this fact, but uniformly behaved in the ſame atrocious manner. At laſt they hanged one of their own number; two died; three were baniſhed to

Cayenne, Caylus.

a desert island; and the rest abandoned themselves to every kind of excess. The commandant of the citadel deserted to the Dutch with part of his garrison. The savages, roused by numberless provocations, fell upon the remainder: so that the few who were left thought themselves happy in escaping to the Leeward Islands in a boat and two canoes, abandoning the fort, ammunition, arms and merchandise, fifteen months after they had landed on the island.

In 1663, a new company was formed, whose capital amounted only to 8750l. By the assistance of the ministry they expelled the Dutch who had taken possession of the island, and settled themselves much more comfortably than their predecessors. In 1667 the island was taken by the English, and in 1676 by the Dutch, but afterwards restored to the French: and since that time it has never been attacked. Soon after some pirates, laden with the spoils they had gathered in the South seas, came and fixed their residence at Cayenne; resolving to employ the treasures they had acquired in the cultivation of the lands. In 1688, Ducasse, an able seaman, arrived with some ships from France, and proposed to them the plundering of Surinam. This proposal exciting their natural turn for plunder, the pirates betook themselves to their old trade, and almost all the rest followed their example. The expedition, however, proved unfortunate. Many of the assailants were killed, and all the rest taken prisoners and sent to the Carribee islands. This loss the colony has never yet recovered.

The island of Cayenne is about 16 leagues in circumference, and is only parted from the continent by two rivers. By a particular formation, uncommon in islands, the land is highest near the water side, and low in the middle. Hence the land is so full of morasses, that all communication between the different parts of it is impossible, without taking a great circuit. There are some small tracts of an excellent soil to be found here and there; but the generality is dry, sandy, and soon exhausted. The only town in the colony is defended by a covert way, a large ditch, a very good mud rampart, and five bastions. In the middle of the town is a pretty considerable eminence, of which a redoubt has been made that is called the *fort*. The entrance into the harbour is through a narrow channel; and ships can only get in at high water, through the rocks and reefs that are scattered about this pass.

The first produce of Cayenne was the arnotto; from the culture of which the colonists proceeded to that of cotton, indigo, and lastly sugar. It was the first of all the French colonies that attempted to cultivate coffee. The coffee tree was brought from Surinam in 1721 by some deserters from Cayenne, who purchased their pardon by so doing. Ten or twelve years after they planted cocoa. In the year 1752 there were exported from Cayenne 260,541 pounds of arnotto, 80,263 pounds of sugar, 17,919 pounds of cotton, 26.881 pounds of coffee, 91,916 pounds of cocoa, 618 trees for timber, and 104 planks.

CAYLUS, Count de, Marquis de Sternay, Baron de Bronsac, was born at Paris in 1692. He was the eldest of the two sons of John Count de Caylus, lieutenant general of the armies of the king of France, and of the marchioness de Villette. The count and countess his father and mother were very careful of the education of their son. The former instructed him in the profession of arms, and in bodily exercises; the latter watched over and fostered the virtues of his mind, and this delicate task she discharged with singular success. The countess was the niece of Madame de Maintenon, and was remarkable both for the solidity of her understanding and the charms of her wit. She was the author of that agreeable book entitled "The Recollections of Madame de Caylus," of which Voltaire lately published an elegant edition. The amiable qualities of the mother appeared in the son; but they appeared with a bold and military air. In his natural temper he was gay and sprightly, had a taste for pleasure, a strong passion for independence, and an invincible aversion to the servitude of a court. Such were the instructors of the Count de Caylus. He was only twelve years of age when his father died at Brussels in 1704. After finishing his exercises, he entered into the corps of the *Musquetoires;* and in his first campaign in the year 1709, he distinguished himself by his valour in such a manner, that Louis XIV. commended him before all the court, and rewarded him with an enfigncy in the *Gendarmerie*. In 1711 he commanded a regiment of dragoons, which was called by his own name; and he signalized himself at the head of it in Catalonia. In 1713, he was at the siege of Fribourg, where he was exposed to imminent danger in the bloody attack of the covered way. The peace of Rastadt having left him in a state of inactivity ill suited to his natural temper, his vivacity soon carried him to travel into Italy; and his curiosity was greatly excited by the wonders of that country, where antiquity is still fruitful, and produces so many objects to improve taste and to excite admiration. The eyes of the count were not yet learned; but he was struck with the sight of so many beauties, and soon became acquainted with them. After a year's absence, he returned to Paris with so strong a passion for travelling and for antiquities, as induced him to quit the army.

Caylus.

He had no sooner quitted the service of Louis, than he sought for an opportunity to set out for the Levant, When he arrived at Smyrna, he visited the ruins of Ephesus. From the Levant he was recalled in February 1717 by the tenderness of his mother. From that time he left not France, but to make two excursions to London. The Academy of Painting and Sculpture adopted him an honorary member in the year 1731; and the count, who loved to realize titles, spared neither his labour, nor his credit, nor his fortune, to instruct, assist, and animate the artists. He wrote, the lives of the most celebrated painters and engravers that have done honour to this illustrious academy; and, in order to extend the limits of the art, which seemed to him to move in too narrow a circle, he collected, in three different works, new subjects for the painter, which he had met with in the works of the ancients.

Such was his passion for antiquity, that he wished to have had it in his power, to bring the whole of it to life again. He saw with regret, that the works of the ancient painters, which have been discovered in our times, are effaced and destroyed almost as soon as they are drawn from the subterraneous mansions where they were buried. A fortunate accident furnished

Caylus.

niſhed him with the means of ſhowing us the compoſition and the colouring of the pictures of ancient Rome. The coloured drawings which the famous Pietro Sante Bartoli had taken there from antique pictures, fell into his hands. He had them engraved; and, before he enriched the king of France's cabinet with them, he gave an edition of them at his own expence. It is perhaps the moſt extraordinary book of antiquities that ever will appear. The whole is painted with a purity and a preciſion that are inimitable; we ſee the livelineſs and the freſhneſs of the colouring that charmed the Cæſars. There were only 30 copies publiſhed; and there is no reaſon to expect that there will hereafter be any more.

Count de Caylus was engaged at the ſame time in an enterpriſe ſtill more favourable to Roman grandeur, and more intereſting to the French nation. Colbert had framed the deſign of engraving the Roman antiquities that are ſtill to be ſeen in the ſouthern provinces of France. By his orders Mignard the architect had made drawings of them, which Count de Caylus had the good fortune to recover. He reſolved to finiſh the work begun by Colbert, and to dedicate it to that great miniſter; and ſo much had he this enterpriſe at heart, that he was employed in it during his laſt illneſs, and warmly recommended it to M. Mariette.

In 1742, Count Caylus was admitted honorary member of the Academy of Belles Lettres; and then it was that he ſeemed to have found the place for which nature deſigned him. The ſtudy of literature now became his ruling paſſion; he conſecrated to it his time and his fortune; he even renounced his pleaſures to give himſelf wholly up to that of making ſome diſcovery in the field of antiquity. But amidſt the fruits of his reſearch and invention, nothing ſeemed more flattering to him than his diſcovery of encauſtic painting. A deſcription of Pliny's, but too conciſe a one to give him a clear view of the matter, ſuggeſted the idea of it. He availed himſelf of the friendſhip and ſkill of M. Magault, a phyſician in Paris, and an excellent chemiſt; and by repeated experiments found out the ſecret of incorporating wax with divers tints and colours, and of making it obedient to the pencil. Pliny has made mention of two kinds of encauſtic painting practiſed by the ancients; one of which was performed with wax, and the other upon ivory, with hot punches of iron. It was the former that Count Caylus had the merit of reviving; and M. Muntz afterwards made many experiments to carry it to perfection.

In the hands of Count Caylus, literature and the arts lent each other a mutual aid. But it would be endleſs to give an account of all his works. He publiſhed above 40 diſſertations in the Memoirs of the Academy of Belles Lettres. The artiſts he was particularly attentive to; and to prevent their falling into miſtakes from an ignorance of coſtume, which the ableſt of them have ſometimes done, he founded a prize of 500 livres, the object of which is to explain, by means of authors and monuments, the uſages of ancient nations. In order that he might enjoy with the whole world the treaſures he had collected, he cauſed them to be engraved, and gave a learned deſcription of them in a work which he embelliſhed with 800 copper plates.

The ſtrength of his conſtitution ſeemed to give him hopes of a long life: but a humour ſettling in one of his legs, which entirely deſtroyed his health, he expired on the 5th of September 1765, and by his death his family is extinct. The tomb erected to the honour of Count Caylus is to be ſeen in the chapel of St Germain l'Auxerrois, and deſerves to be remarked. It is perfectly the tomb of an antiquary. This monument was an ancient ſepulchral antique, of the moſt beautiful porphyry, with ornaments in the Egyptian taſte. From the moment he procured it, he had deſtined it to grace the place of his interment. While he awaited the fatal hour, he placed it in his garden, where he uſed to look upon it with a tranquil but thoughtful eye, and pointed it out to the inſpection of his friends.

The character of Count Caylus is to be traced in the different occupations which divided his cares and his life. In ſociety, he had all the frankneſs of a ſoldier, and a politeneſs which had nothing in it of deceit or circumvention. Born independent, he applied to ſtudies which ſuited his taſte. His heart was yet better than his abilities. In his walks he uſed frequently to try the honeſty of the poor, by ſending them with a piece of money to get change for him. In theſe caſes he enjoyed their confuſion at not finding him; and then preſenting himſelf, uſed to commend their honeſty, and give them double the ſum. He ſaid frequently to his friends, "I have this day loſt a crown; but I was ſorry that I had not an opportunity of giving a ſecond. The beggar ought not to want integrity."

Cayſter || Ceanothus.

CAYSTER, or CAYSTRUS, in *Ancient Geography*, a river of Ionia, whoſe mouth Ptolemy places between Colophon and Epheſus; commended by the poets for its ſwans, which it had in great numbers. Its ſource was in the Montes Cilbiani, (Pliny). *Cayſtrius Campus* was a part of the territory of Epheſus. *Campi Cayſtriani* of Lydia were plains lying in the middle between the inland parts and Mount Tmolus.

CAZEROM, or CAZERON, a city of Aſia, in Perſia, ſituated in E. Long. 70. N. Lat. 29. 15.

CAZIC, or CAZIQUE, a title given by the Spaniards to the petty kings, princes, and chiefs, of the ſeveral countries of America, excepting thoſe of Peru, which are called *curatas*. The French call them *caſiques*, a denomination which they always give to the Tartarian hordes.—The cazics, in ſome places, do the office of phyſicians, and in others of prieſts, as well as of captains. The dignity of cazic among the Chiites, a people of South America, does not deſcend to children, but muſt be acquired by valour and merit. One of the prerogatives attached to it is, that the cazic may have three wives, while the other people are allowed only one. Mexico comprehended a great number of provinces and iſlands, which were governed by lords called *caziques*, dependent on and tributary to the emperor. Thirty of theſe vaſſals are ſaid to have been ſo powerful, that they were able, each of them, to bring an army of 100,000 men into the field.

CAZIMIR, a handſome town of Poland, in the palatinate of Lublin, ſituated on a hill covered with trees, in E. Long. 3. 10. N. Lat. 51. 5.

CEA. See CEOS.

CEANOTHUS, NEW-JERSEY TEA. See BOTANY *Index*.

CEBES,

Cebes, Cecil.

CEBES, of Thebes, a Socratic philoſopher, author of the admired *Table of Cebes;* or "Dialogues on the Birth, Life, and Death of Mankind." He flouriſhed about 405 years before Chriſt.—The above piece is mentioned by ſome of the ancient writers, by Lucian, D. Laertius, Tertullian, and Suidas: but of Cebes himſelf we have no account, ſave that he is once mentioned by Plato, and once by Xenophon. The former ſays of him, in his "Phædo," that he was a ſagacious inveſtigator of truth, and never aſſented without the moſt convincing reaſons: the latter, in this "Memorabilia," ranks him among the few intimates of Socrates, who excelled the reſt in the innocency of their lives. Cebes's *Tabula* is uſually printed with Epictetus's *Manuale*.

CECIL, William, Lord Burleigh, treaſurer of England in the reign of Queen Elizabeth, was the ſon of Richard Cecil, Eſq; maſter of the robes to King Henry VIII. He was born in the houſe of his grandfather, David Cecil, Eſq; at Bourn in Lincolnſhire, in the year 1520; and received the rudiments of his education in the grammar ſchool at Grantham. From thence he was removed to Stamford; and about the year 1535, was entered of St John's College, Cambrige. Here he began his ſtudies with a degree of enthuſiaſtic application very uncommon in young gentlemen of family. At the age of 16 he read a ſophiſtry lecture, and at 19 a voluntary Greek lecture, which was the more extraordinary as being at a time when the Greek language was by no means univerſally underſtood. In 1541 he went to London, and became a member of the ſociety of Gray's Inn, with an intention to ſtudy the law; but he had not been long in that ſituation before an accident introduced him to King Henry, and gave a new bias to his purſuits. O'Neil, a famous Iriſh chief, coming to court, had brought with him two Iriſh chaplains, violent bigots to the Romiſh faith; with theſe Mr Cecil, viſiting his father, happened to have a warm diſpute in Latin, in which he diſplayed uncommon abilities. The king, being informed of it, ordered the young man into his preſence, and was ſo pleaſed with his converſation, that he commanded his father to find a place for him. He accordingly requeſted the reverſion of the *cuſtos brevium*, which Mr Cecil afterwards poſſeſſed. About this time he married the ſiſter of Sir John Cheke, by whom he was recommended to the earl of Hertford, afterwards duke of Somerſet and protector.

Soon after King Edward's acceſſion, Mr Cecil came into the poſſeſſion of the office of *cuſtos brevium*, worth about 240l. a-year. His firſt lady dying in 1543, he married the daughter of Sir Anthony Cook, director of the king's ſtudies. In 1547, he was appointed by the protector, maſter of requeſts; and ſoon after attended his noble patron on his expedition againſt the Scots, and was preſent at the battle of Muſſelburgh. In this battle, which was fought on the 10th of September 1547, Mr Cecil's life was miraculouſly preſerved by a friend, who on puſhing him out of the level of a cannon, had his arm ſhattered to pieces. The ſight and judgment of his friend muſt have been as extraordinary as his friendſhip, to perceive the preciſe direction of a cannon ſhot; unleſs we ſuppoſe, that the ball was almoſt quite ſpent; in which caſe the thing is not impoſſible. The ſtory is told in his life by a domeſtic. In the year 1548, Mr Cecil was made ſecretary of ſtate; but in the following year, the duke of Northumberland's faction prevailing, he ſuffered in the diſgrace of the protector Somerſet, and was ſent priſoner to the tower. After three months confinement he was releaſed; in 1551 reſtored to his office; and ſoon after knighted, and ſworn of the privy council. In 1553 he was made chancellor of the order of the Garter, with an annual fee of 100 merks. Cecil.

On the death of Edward VI. Mr Cecil prudently refuſed to have any concern in Northumberland's attempt in favour of the unfortunate Lady Jane Gray; and when Queen Mary acceded to the throne, he was graciouſly received at court; but not chooſing to change his religion, was diſmiſſed from his employments. During this reign, he was twice elected knight of the ſhire for the county of Lincoln; and often ſpoke in the houſe of commons, with great freedom and firmneſs, in oppoſition to the miniſtry. Nevertheleſs, though a Proteſtant and a *patriot* (that is, a courtier out of place), he had the addreſs to ſteer through a very dangerous ſea without ſhipwreck.

Queen Elizabeth's acceſſion in the year 1558 immediately diſpelled the cloud which had obſcured his fortunes and miniſterial capacity. During the horrid reign of her ſiſter, he had conſtantly correſponded with the princeſs Elizabeth. On the very day of her acceſſion, he preſented her with a paper containing twelve articles neceſſary for her immediate deſpatch; and, in a few days after, was ſworn of the privy council, and made ſecretary of ſtate. His firſt advice to the queen was, to call a parliament; and the firſt buſineſs he propoſed after it was aſſembled, was the eſtabliſhment of a national church. A plan of reformation was accordingly drawn up under his immediate inſpection, and the legal eſtabliſhment of the church of England was the conſequence. Sir William Cecil's next important concern, was to reſtore the value of the coin, which had in the preceding reigns been conſiderably debaſed. In 1561, he was appointed maſter of the wards; and, in 1571, created baron of Burleigh, as a reward for his ſervices, particularly in having lately ſtifled a formidable rebellion in the north. The following year he was honoured with the garter, and raiſed to the office of lord high treaſurer of England. From this period we find him the *primum mobile* of every material tranſaction during the glorious reign of Queen Elizabeth. Notwithſtanding the temporary influence of other favourites, Lord Burleigh was, in fact, her prime miniſter, and the perſon on whom ſhe chiefly confided in matters of real importance. Having filled the higheſt and moſt important offices of the ſtate for 40 years, and guided the helm of government during the moſt glorious period of Engliſh hiſtory, he departed this life on the 4th of Auguſt 1598, in the 78th year of his age. His body was removed to Stamford, and there depoſited in the family vault, where a magnificent tomb was erected to his memory.—Notwithſtanding his long enjoyment of ſuch lucrative imployments, he left only an eſtate of 4000l. per annum, 11,000l. in money, and effects worth about 14,000l. He lived, indeed, in a manner ſuitable to his high rank and importance,

Cecil, Cecilia.

portance. He had four places of reſidence, viz. his lodgings at court, his houſe in the Strand, his ſeat at Burleigh Park near Stamford, and his ſeat at Theobald's. The laſt of theſe was his favourite place of retirement, where he frequently entertained the queen at a vaſt expence.

Lord Burleigh was doubtleſs a man of ſingular abilities and prudence, amiable in his private character, and one of the moſt able, upright, and indefatigable miniſters ever recorded in the annals of this kingdom. His principal works are, 1. *La Complainte de l'ame pechereſſe*, or the Complaint of a ſinful Soul, in French verſe, in the king's library. 2. Materials for Patten's *Diarium exped. Scoticæ*, London 1541, 12mo. 3. Slanders and lies malicioufly, groſsly, and impudently vomited out, in certain traitorous books and pamphlets, againſt two counſellors, Sir Francis Bacon and Sir William Cecil. 4. A ſpeech in parliament, 1562, Strype's Mem. vol. iv. p. 107. 5. Precepts or directions for the well ordering of a man's life, 1637, Harl. Cat. vol. ii. p. 755. 6. Meditations on the death of his lady, Ballard's Mem. p. 184. 7. Meditations on the ſtate of England during the reign of Queen Elizabeth, manuſcript. 8. The execution of juſtice in England for the maintenance of public and Chriſtian peace, &c. Lond. 1581, 1583, Somer's tracts, 4th Collect. vol. i. p. 5. 9. Advice to Queen Elizabeth in matters of religion and ſtate, ib. p. 101, 106. 10. A great number of letters. See Peck's *Deſiderata Curioſa*, Howard's collections, &c. 11. Several pedigrees, ſome of which are preſerved in the archbiſhop of Canterbury's library at Lambeth, N° 299, 747.

CECILIA, St, the patroneſs of muſic, has been honoured as a martyr ever ſince the fifth century. Her ſtory, as delivered by the notaries of the Roman church, and from them tranſcribed into the Golden Legend and other books of the like kind, ſays, that ſhe was a Roman lady, born of noble parents about the year 225. That, notwithſtanding ſhe had been converted to Chriſtianity, her parents married her to a young Pagan nobleman named Valerianus; who going to bed to her on the wedding night, *as the cuſtom is*, ſays the book, was given to underſtand by his ſpouſe, that ſhe was nightly viſited by an angel, and that he muſt forbear to approach her, otherwiſe the angel would deſtroy him. Valerianus, ſomewhat troubled at theſe words, deſired that he might ſee his rival the angel; but his ſpouſe told him that was impoſſible, unleſs he would conſent to be baptized and become a Chriſtian. This he conſented to; after which, returning to his wife, he found her in her cloſet at prayer, and by her ſide, in the ſhape of a beautiful young man, an angel clothed with brightneſs. After ſome converſation with the angel, Valerianus told him that he had a brother named Tiburtius, whom he greatly wiſhed to ſee a partaker of the grace which he himſelf had received. The angel told him that his deſire was granted, and that they ſhould be both crowned with martyrdom in a ſhort time. Upon this the angel vaniſhed, and was not long in ſhowing himſelf as good as his word; Tiburtius was converted, and both he and his brother Valerianus were beheaded. Cecilia was offered her life upon condition that ſhe would ſacrifice to the deities of the Romans; but ſhe refuſed; upon which ſhe was thrown into a caldron of boiling water, and ſcaled to death; others ſay, that ſhe was ſtifled in a dry bath, i. e. an encloſure from whence the air was excluded, having a ſlow fire underneath it; which kind of death was ſometimes inflicted by the Romans upon women of quality who were criminals. Upon the ſpot where her houſe ſtood, is a church, ſaid to have been built by Pope Urban I. who adminiſtered baptiſm to her huſband and his brother: it is the church of St Cecilia at Traſtevere; within is a moſt curious painting of the ſaint, as alſo a ſtately monument with a cumbent ſtatue of her with her face downwards. There is a tradition of St Cecilia, that ſhe excelled in muſic; and that the angel who was thus enamoured of her, was drawn from the celeſtial regions by the charms of her melody: this has been deemed authority ſufficient to making her the patroneſs of muſic and muſicians. The legend of St Cecilia has given frequent occaſion to painters and ſculptors to exerciſe their genius in repreſentations of her, playing on the organ, and ſometimes on the harp. Raphael has painted her ſinging with a regal in her hands; and Domenichino and Mignard, ſinging and playing on the harp.

Cecrops || Ceimelia.

CECROPS, the founder and firſt king of Athens, about the time of Moſes the lawgiver of the Hebrews. He was the firſt who eſtabliſhed civil government, religious rites, and marriage among the Greeks; and died after a reign of 50 years. See Attica, N° 4.

CEDAR. See Juniperus and Pinus, Botany *Index*.

The ſpecies of cedar famous for its duration, is that popularly called the cedar of Lebanon (*Pinus cedrus*), by the ancients *cedrus magna*, or the great cedar; alſo *cedrelate*, Κεδρελατη. See Pinus, Botany *Index*.

CEDRENUS, George, a Grecian monk, lived in the 11th age, and wrote "Annals, or an abridged Hiſtory, from the beginning of the World to the Reign of Iſaac Comnenus emperor of Conſtantinople, who ſucceeded Michael IV. in 1057." This work is no more than an extract from ſeveral hiſtorians. There is an edition of it, printed at Paris in 1647, with the Latin verſion of Xylander, and the notes of Father Goar a Dominican.

CEDRUS, the cedar tree, mahogany, &c. See Juniperus, Pinus, and Swietenia, Botany *Index*.

CEILING, in *Architecture*, the top or roof of a lower room; or a covering of plaſter, over laths nailed on the bottom of the joiſts that bear the floor of the upper room; or where there is no upper room, on joiſts for the purpoſe; hence called *ceiling joiſts*. The word *ceiling* anſwers pretty accurately to the Latin *lacunar*, "every thing over head."

Plaſtered ceilings are much uſed in Britain, more than any other country: nor are they without their advantages, as they make the room lightſome; are good in caſe of fire; ſtop the paſſage of the duſt; leſſen the noiſe over head; and, in ſummer, make the air cooler.

Ceiling, in ſea language, denotes the inſide planks of a ſhip.

CEIMELIA, from κειμαι, "to be laid up," in antiquity, denotes choice or precious pieces of furniture or ornaments, reſerved or laid up for extraordi-

nary

Ceimeliarchium || Celebes.

nary occaſions and uſes; in which ſenſe, ſacred garments, veſſels, and the like, are reputed of the ceimelia of a church. Medals, antique ſtones, figures, manuſcripts, records, &c. ure the ceimelia of men of letters.

CEIMELIARCHIUM, the repoſitory or place where ceimelia are preſerved.

CEIMELIOPHYLAX, (from κειμηλιον and φυλαττω *I keep*), the keeper or curator of a collection of ceimelia; ſometimes alſo denominated *ceimeliarcha*. The ceimeliarcha, or ceimeliophylax, was an officer in the ancient churches or monaſteries, anſwering to what was otherwiſe denominated *chartophylax*, and *cuſtos archivorum*.

CELÆNÆ, in *Ancient Geography*, the capital of Phrygia Magna, ſituated on a cognominal mountain, at the common ſources of the Mæander and Marſyas. The king of Perſia had a ſtrong palace beneath the citadel, by the ſprings of the Marſyas, which roſe in the market-place, not leſs in ſize than the Mæander, and flowed through the city. Cyrus the younger had alſo a palace there, but by the ſprings of the Meander, which river paſſed likewiſe through the city. He had moreover, an extenſive paradiſe or park, full of wild beaſts, which he hunted on horſeback for exerciſe or amuſement; and watered by the Mæander, which ran through the middle. Xerxes was ſaid to have built theſe palaces and the citadel after his return from his expedition into Greece.

Antiochus Soter removed the inhabitants of Celænæ into a city, which he named from his mother, Apamea; and which became afterwards a mart inferior only to Epheſus. See APAMEA.

CELANDINE. See CHELIDONIUM, BOTANY *Index*.

CELANO, a town of Italy, in the kingdom of Naples, in Farther Abruzzo. It is ſeated a mile from the lake Celano, anciently called FUCINUS. E. Long. 13. 39. N. Lat. 41. 56.

CELARENT, among logicians, a mode of ſyllogiſm, wherein the major and concluſion are univerſal negative propoſitions, and the minor an univerſal affirmative.

E. gr. cE None whoſe underſtanding is limited can be omniſcient.
lA Every man's underſtanding is limited.
rEnt Therefore no man is omniſcient.

CELASTRUS. See BOTANY *Index*.

In Senegal the negroes uſe the powder of the root of this plant as a ſpecific againſt gonorrhœas, which it is ſaid to cure in eight or ſometimes in three days. An infuſion of the bark of a ſpecies of ſtaff tree, which grows in the iſle of France, is ſaid to poſſeſs the ſame virtues.

CELEBES, an iſland in the Indian ſea, ſituated under the equator, and called by ſome *Macaſſar*. The length and breadth have not been accurately computed; but the circumference, at a medium, is about 800 miles. It had formerly ſix kingdoms, which are reduced to one. The air is hot and moiſt; and ſubject to great rains during the north-weſt winds, which blow from November to March, at which time the country is overflowed, and for this reaſon they build their houſes on piles of wood ten feet high. The moſt healthful time is during the northern monſoons, which ſeldom fail blowing regularly in one part of the year. The chief vegetables are rice and cocoas; but they have ebony, ſanders, &c. Their fruits and flowers are much the ſame as in the neighbouring parts of the Indies. They have pepper, ſugar, betel, areca, the fineſt cotton, and opium. The natives have bright olive complexions, and the women have ſhining black hair. They are thought to be very handſome by the Dutch and Chineſe, who often purchaſe them for bedfellows. The men are induſtrious, robuſt, and make excellent ſoldiers. Their arms are ſabres, and trunks, from whence they blow poiſoned darts, which are pointed with the tooth of a ſea fiſh. Some likewiſe uſe poiſoned daggers. They were the laſt of the Indian nations that were enſlaved by the Dutch, which could not be effected till after a long war. They teach their children to read and write, and their characters have ſome reſemblance of the Arabic. Their religion being Mahometan, the men indulge themſelves in many wives and concubines. The employment of the women is ſpinning, cookery, and making their own and their huſbands clothes. The men wear jewels in their ears, and the women gold chains about their necks. The inhabitants in general go half naked, without any thing on their head, legs, or feet, and ſome have nothing but a cloth about their middle. The ſtreets of the town Macaſſar are ſpacious, and planted with trees on every ſide. It ſtands by the ſide of the only large river they have in the iſland. The Dutch have a fort here, mounted with 40 guns, and garriſoned with 700 men. There is only one other town of note, called *Jampandam*, where they alſo have a fort. The iſland is not near ſo populous, as when the Dutch conquered it; the men being hired for ſoldiers in moſt of the neighbouring countries.

Celebes, Celeres.

The religion of theſe iſlands was formerly idolatry. They worſhipped the ſun and moon. They ſacrificed to them in the public ſquares, having no materials which they thought valuable enough to be employed in raiſing temples. About two centuries ago, ſome Chriſtians and Mahometans having brought their opinions to Celebes, the principal king of the country took a diſlike to the national worſhip. Having convened a general aſſembly, he aſcended an eminence, when, ſpreading out his hands towards heaven, he told the Deity, that he would acknowledge for truth that doctrine whoſe miniſters ſhould firſt arrive in his dominions, and, as the winds and waves were at his command, the Almighty would have himſelf to blame if he embraced a falſehood. The aſſembly broke up, determined to wait the orders of heaven, and to obey the firſt miſſionaries that ſhould arrive. The Mahometans were the moſt active, and their religion accordingly prevailed.

CELERES, in Roman antiquity, a regiment of body-guards belonging to the Roman kings, eſtabliſhed by Romulus, and compoſed of 300 young men, choſen out of the moſt illuſtrious Roman families, and approved by the ſuffrages of the curiæ of the people, each of which furniſhed ten. The name comes from *celer*, "quick, ready;" and was given them becauſe of their promptneſs to obey the king.

The celeres always attended near the king's perſon, to guard him, to be ready to carry his orders, and to

Celeri. execute them. In war they made the van-guard in the engagement, which they always began firſt; in retreats, they made the rear-guard.

Though the celeres were a body of horſe, yet they uſually diſmounted, and fought on foot; their commander was called tribune, or prefect of the celeres. They were divided into three troops of 100 each, commanded by a captain called centurio: their tribune was the ſecond perſon in the kingdom.

Plutarch ſays, Numa broke the celeres; if this be true, they were ſoon re-eſtabliſhed; for we find them under moſt of the ſucceeding kings: witneſs the great Brutus, who expelled the Tarquins, and who was the tribune of the celeres.

CELERI, in *Botany*, the Engliſh name of a variety of the APIUM GRAVEOLENS.

The ſeed of celeri ſhould be ſown at two or three different times, the better to continue it for uſe through the whole ſeaſon without running up to ſeed. The firſt ſowing ſhould be in the beginning of March, upon a gentle hot-bed; the ſecond may be at the end of the ſame month, which ought to be in an open ſpot of light earth, where it may enjoy the benefit of the ſun; the third time of ſowing ſhould be in the latter end of April, or beginning of May, on a moiſt ſoil; and if expoſed to the morning ſun only, it will be ſo much the better, but it ſhould not be under the drip of trees. The middle of May, ſome of the plants of the firſt ſowing will be fit to tranſplant for blanching.

The manner of tranſplanting it is as follows: after having cleared the ground of weeds, you muſt dig a trench by a line about 10 inches wide, and 8 or 9 inches deep, looſening the earth in the bottom, and laying it level; and the earth that comes out of the trench ſhould be equally laid on each ſide the trench, to be ready to draw in again to earth the celeri as it advances in height. Theſe trenches ſhould be made at three feet diſtance from each other; then plant your plants in the middle of the trench, at about four or five inches diſtance, in one ſtraight row, having before trimmed the plants, and cut off the tops of the long leaves: and as they are planted, you muſt obſerve to cloſe the earth well to their roots with your feet, and to water them plentifully until they have taken new root.—As theſe plants advance in height, you muſt obſerve to draw the earth on each ſide cloſe to them, being careful not to bury their hearts, nor ever to do it but in dry weather; otherwiſe the plants will rot. When your plants have advanced a conſiderable height above the trenches, and all the earth, which was laid on the ſides thereof hath been employed in earthing them up, you muſt then make uſe of a ſpade to dig up the earth between the trenches, which muſt alſo be made uſe of for the ſame purpoſe, continuing from time to time to earth it up until it is fit for uſe. The laſt crop ſhould be planted in a drier ſoil, to prevent its being rotted with too much wet in the winter. You will do well to cover your ridges of celeri with ſome peaſe-haulm, or ſome ſuch light covering, when the froſt is very hard, which will admit the air to the plants; for if they are covered too cloſe, they will be very ſubject to rot: by this means you will preſerve your celeri till ſpring; but you muſt remember to take off the covering whenever the weather will permit, otherwiſe it will be apt to cauſe the celeri to pipe and run to ſeed. The celeri, when full blanched, will not continue good above three weeks or a month before it will rot or pipe; therefore, in order to continue it good, you ſhould have, at leaſt, ſix or ſeven different ſeaſons of planting, proportioned to the conſumption. Celeri ‖ Celeſtins.

The other ſort of celeri, which is commonly called *celeriac*, is to be managed in the ſame manner; excepting that this ſhould be planted on the level ground, or in very ſhallow drills: for this plant ſeldom grows above eight or ten inches high, ſo requires but little earthing up; the great excellency of this being in the ſize of the root, which is often as large as ordinary turnips.

The beſt method to ſave the ſeed of celeri, is to make choice of ſome long good roots of the upright celeri, which have not been too much blanched, and plant them out, at about a foot aſunder, in a moiſt ſoil, early in the ſpring; and when they run up to ſeed, keep them ſupported with ſtakes, to prevent their being broken down with the wind: and in July, when the ſeed begins to be formed, if the ſeaſon ſhould prove very dry, it will be proper to give ſome water to the plant, which will greatly help its producing good ſeeds. In Auguſt theſe ſeeds will be ripe, at which time it ſhould be cut up, in a dry time, and ſpread upon cloths in the ſun to dry; then beat out the ſeeds, and preſerve it in bags for uſe.

CELERI, Wild, (*Apium antarcticum*), was found in conſiderable quantities by Sir Joſeph Banks and Dr Solander, on the coaſt of Terra del Fuego. It is like the garden celeri in the colour and diſpoſition of the flowers, but the leaves are of a deeper green. The taſte is between that of celeri and parſley. It is a very uſeful ingredient in the ſoup for ſeamen, becauſe of its antiſcorbutic quality.

CELERITY, in *Mechanics*, the ſwiftneſs of any body in motion. It is alſo defined to be an affection of motion, by which any moveable body runs through a given ſpace in a given time.

CELESTINS, a religious order ſo called from their founder Peter de Meuron, afterwards raiſed to the pontificate under the name of Celeſtin V. This Peter, who was born at Iſernia, a little town in the kingdom of Naples, in the year 1215, of but mean parents, retired, while very young, to a ſolitary mountain, in order to dedicate himſelf wholly to prayer and mortification. The fame of his piety brought ſeveral, cut of curioſity, to ſee him; ſome of whom, charmed with his virtues, renounced the world to accompany him in his ſolitude. With theſe he formed a kind of community in the year 1254: which was approved by Pope Urban IV. in 1264, and erected into a diſtinct order, called the *hermits of St Damien*. Peter de Meuron governed this order till 1286, when his love of ſolitude and retirement induced him to quit the charge. In July 1294, the great reputation of his ſanctity raiſed him, though much againſt his will, to the pontificate. He then took the name of Celeſtin V. and his order that of *Celeſtins* from him. By his bull he approved their conſtitutions, and confirmed all their monaſteries to the number of 20. But he ſat too ſhort time in the chair of St Peter to do many great things for his order; for having governed the church five

months

Celetes || Celibate.

months and a few days, and conſidering the great burden he had taken upon him, to which he thought himſelf unequal, he ſolemnly renounced the pontificate in a conſiſtory held at Naples.

After his death, which happened in 1296, his order made great progreſs not only in Italy, but in France likewiſe: whither the then general Peter of Tivoli ſent 12 religious, at the requeſt of King Philip the Fair, who gave them two monaſteries; one in the foreſt of Orleans, and the other in the foreſt of Compeigne at Mount Chartres. This order likewiſe paſſed into ſeveral provinces of Germany. They have about 96 convents in Italy, and 21 in France, under the title of priories.

The Celeſtins riſe two hours after midnight to ſay matins. They eat no fleſh at any time, except when they are ſick. They faſt every Wedneſday and Friday, from Eaſter to the feaſt of the exaltation of the holy croſs; and, from that feaſt to Eaſter, every day. As to their habit, it conſiſts of a white gown, a capuche, and a black ſcapulary. In the choir, and when they go out of the monaſtery, they wear a black cowl with the capuche: their ſhirts are of ſerge.

CELETES, or CELETÆ, (from κέλης, *a race-horſe*), in antiquity, denote ſingle or ſaddle horſes, by way of contradiſtinction from thoſe yoked or harneſſed together, called *bigarii*, *quadrigarii*, &c. The ſame denomination is alſo given to the cavaliers or riders on horſeback; and hence ſome deduce celeres, the name of Romulus's guard.

CELEUSMA, or CELEUMA, in antiquity, the ſhout or cry of the ſeamen, whereby they animated each other in their work of rowing. The word is formed from κελευειν, *to call, to give the ſignal.*

CELEUSMA, was alſo a kind of ſong or formula, rehearſed or played by the maſter, or others, to direct the ſtrokes and movements of the mariners, as well as to encourage them to labour. See CELEUSTES.

CELEUSTES, in *Ancient Navigation*, the boatſwain or officer appointed to give the rowers the ſignal, when they were to pull, and when to ſtop. He is alſo denominated *epopeus*, and by the Romans, *portiſculus*; ſometimes ſimply *hortator*.

CELIBACY, the ſtate of unmarried perſons. Scaliger derives the word from the Greek κοιτη, "bed," and λειπω, *linquo*, "I leave:" others ſay it is formed from *cæli beatitudo*, q. d. *the bleſſedneſs of heaven*.

The ancient Romans uſed all means imaginable to diſcourage celibacy. Nothing was more uſual than for the cenſors to impoſe a fine on bachelors. Dionyſius Halicarnaſſenſis mentions an ancient conſtitution whereby all perſons of full age were obliged to marry. But the firſt law of that kind, of which we have any certainty, is that under Auguſtus, called *lex Julia de maritandis ordinibus*. It was afterwards denominated *Papia Poppæa*, and more uſually *Julia Papia*, in regard of ſome new ſanction and amendments made to it under the conſuls Papius and Poppæus. By this law, divers prerogatives were given to perſons who had many children; penalties impoſed on thoſe who lived a ſingle life, as that they ſhould be incapable of receiving legacies, and not exceeding a certain proportion.

CELIBATE, the ſame with celibacy; but it is chiefly uſed in ſpeaking of the ſingle life of the Popiſh clergy, or the obligation they are under to abſtain from marriage. In this ſenſe we ſay the law of *celibate*. Monks and religious take a vow of celibate; and what is more, of chaſtity. Celibate.

The church of Rome impoſes an univerſal celibacy on all its clergy, from the pope to the loweſt deacon and ſubdeacon. The advocates for this uſage pretend that a vow of perpetual celibacy was required in the ancient church as a condition of ordination, even from the earlieſt apoſtolic ages. But the contrary is evident from numerous examples of biſhops and archbiſhops, who lived in a ſtate of matrimony, without any prejudice to their ordination or their function. It is generally agreed that moſt of the apoſtles were married. Some ſay all of them, except St Paul and St John. Others ſay St Paul himſelf was married, becauſe he writes to his *yoke-fellow*, whom they interpret his wife. Be this as it will, in the next ages after the apoſtles, we have accounts of divers married biſhops, preſbyters, and deacons, without any reproof or mark of diſhonour ſet on them; *e. g.* Valens, preſbyter of Philippi, mentioned by Polycarp; and Chæremon, biſhop of Nilus. Novatus was a married preſbyter of Carthage, as we learn from Cyprian; who himſelf was alſo a married man, as Pagi confeſſes; and ſo was Cæcilius the preſbyter who converted him; and Numidius, another preſbyter of Carthage. The reply which the Romaniſts give to this is, that all married perſons, when they came to be ordained, promiſed to live ſeparate from their wives by conſent, which anſwered the vow of celibacy in other perſons. But this is not only ſaid without proof, but againſt it. For Novatus preſbyter of Carthage was certainly allowed to cohabit with his wife after ordination; as appears from the charge that Cyprian brings againſt him, that he had ſtruck and abuſed his wife, and thereby cauſed her to miſcarry. There ſeems indeed to have been, in ſome caſes, a tendency towards the introduction of ſuch a law by one or two zealots; but the motion was no ſooner made than it was quaſhed by the authority of wiſer men. Thus Euſebius obſerves, that Pinytus, biſhop of Gnoſſus in Crete, was for laying the law of celibacy upon his brethren; but Dionyſius biſhop of Corinth wrote to him, that he ſhould conſider the weakneſs of men, and not impoſe that heavy burden on them. In the council of Nice, anno 325, the motion was renewed for a law to oblige the clergy to abſtain from all conjugal ſociety with their wives, whom they had married before their ordination; but Paphnutius, a famous Egyptian biſhop, and one who himſelf never was married, vigorouſly declaimed againſt it, upon which it was unanimouſly rejected. So Socrates and Sozomen tell the ſtory; to which all that Valeſius, after Bellarmin, has to ſay, is, that he ſuſpects the truth of it. The council in Trullo, held in 692, made a difference in this reſpect between biſhops and preſbyters; allowing preſbyters, deacons, and all the inferior orders, to cohabit with their wives after ordination: and giving the Roman church a ſmart rebuke for the contrary prohibition, but at the ſame time laying an injunction upon biſhops to live ſeparate from their wives, and appointing the wives to betake themſelves to a monaſtic life, or become deaconeſſes in the church. And thus was a total celibate eſtabliſhed in the Greek church as to biſhops, but not

Celidographia || Cell.

any others. In the Latin church, the like eſtabliſhment was alſo made, but by ſlow ſteps in many places. For in Africa, even biſhops themſelves cohabited with their wives at the time of the council of Trullo. The celibacy of the clergy, however, appears of an ancient ſtanding, if not of command and neceſſity, yet as of counſel and choice. But as it is clearly neither of divine nor apoſtolical inſtitution, it is at firſt hard to conceive from what motive the court of Rome perſiſted ſo very obſtinately to impoſe this inſtitution on the clergy. But we are to obſerve that this was a leading ſtep to the execution of the project formed of making the clergy independent of princes, and rendering them a ſeparate body to be governed by their own laws. In effect, while prieſts had children, it was very difficult to prevent their dependence on princes, whoſe favours have ſuch an influence on private men; but having no family, they were more at liberty to adhere to the pope.

CELIDOGRAPHIA, the deſcription of the ſpots which appear on the ſurfaces of the ſun and planets. See ASTRONOMY.

CELL, (*Cella*) in ancient writers, denotes a place or apartment uſually under ground, and vaulted, in which were ſtored up ſome ſort of neceſſaries, as wine, honey, and the like; and according to which it was called *Cella Vinaria*, *Olearia*, *Mellaria*, &c. The word is formed from the Latin *celare*, to conceal.

CELLA was alſo uſed for the lodge or habitation of a common proſtitute, as being anciently under ground, hence alſo denominated *fornix*.

Intravit calidum veteri centone lupanar,
Et cellam vacuam. Juv. Sat. vi. ver. 121.

On which place an ancient ſcholiaſt remarks, that the names of the whores were written on the doors of their ſeveral cells; by which we learn the meaning of *inſcripta cella* in Martial, lib. xi. Ep. 46.

CELLA was alſo applied to the bedchambers of domeſtics and ſervants; probably as being low and narrow.—Cicero, inveighing againſt the luxury of Antony, ſays the beds in the very cellæ of his ſervants were ſpread with pompous purple coverlets.

CELLA is alſo applied to the members or apartments of baths. Of theſe there were three principal, called *frigidaria*, *tepidaria*, and *caldaria*; to which may be added a fourth, called *cella aſſa*, and ſometimes *ſudatoria*.

CELLA likewiſe ſignified the *adyta*, or inmoſt and moſt retired parts of temples, wherein the images of the gods to whom the edifices were conſecrated were preſerved. In this ſenſe we meet with *cella Jovis*, *cella Concordiæ*.

CELLA is alſo uſed for a leſſer or ſubordinate ſort of monaſtery dependent on a great one, by which it was erected, and continues ſtill to be governed. The great abbeys in England had moſt of them *cells* in places diſtant from the mother abbey, to which they were accountable, and from which they received their ſuperiors. The alien priories in England were cells to abbeys in Normandy, France, Italy, &c. The name *cell* was alſo given to rich and conſiderable monaſteries not dependent on any other.

CELL ſignifies alſo a little apartment or chamber, ſuch as thoſe wherein the ancient monks, ſolitaries, and hermits, lived in retirement. Some derive the word from the Hebrew כלא, *i. e.* "a priſon, or place where any thing is ſhut up."

Cell || Cellarer.

The ſame name is ſtill retained in divers monaſteries. The dormitory is frequently divided into ſo many cells or lodges. The Carthuſians have each a ſeparate houſe, which ſerves them as a cell. The hall wherein the Roman conclave is held, is divided, by partitions, into divers cells, for the ſeveral cardinals to lodge in.

CELL is alſo a name given to the little diviſions in honeycombs, which are always regular hexagons. See BEE.

CELL, in *Botany*, is applied to the hollow places between the partitions in the pods, huſks, and other ſeed-veſſels of plants: according as there is one, two, three, &c. of theſe cells, the veſſel is ſaid to be unilocular, bilocular, trilocular, &c.

CELLS, in *Anatomy*, little bags, or bladders, where fluids or other matters are lodged; called *loculi*, *cellulæ*, &c. Thus the *cellulæ adipoſæ* are the little cells where the fat is contained; *cellulæ* in the *colon*, are ſpaces wherein the excrements are detained till voided, &c.

CELLAR (*Cellarium*), in ancient writers, denotes the ſame with cella, viz. a conſervatory of eatables, or drinkables.

Cellar differs from vault, as the latter is ſuppoſed to be deeper, the former being frequently little below the ſurface of the ground. In which ſenſe, *cellarium* alſo differed from *penus*, as the former was only a ſtorehouſe for ſeveral days, the latter for a long time. Thus it is the bactroperatæ, a ſort of ancient Cynics, are ſaid by St Jerome to carry their cellar about with them.

Cellarium alſo denoted an allowance of bread, wine, oil, or other proviſion, furniſhed out of the cella, to the uſe of the governor of the province and his officers, &c. In which ſenſe, the word amounts to much the ſame with *annona*.

CELLARS, in modern building, are the loweſt rooms in a houſe, the ceilings of which uſually lie level with the ſurface of the ground on which the houſe is built; or they are ſituated under the pavement before the houſe, eſpecially in ſtreets and ſquares.

Cellars, and other places vaulted under ground, were called by the Greeks *hypogæa*: the Italians ſtill call them *fundi delli caſe*.

CELLARER, or CELLERER, (*Cellerarius* or *Cellarius*), an officer in monaſteries, to whom belong the care and procurement of proviſions for the convent. The denomination is ſaid to be borrowed from the Roman law, where *cellarius* denotes an examiner of accounts and expences. Ulpian defines it thus: "Cellerarius, id eſt, ideo præpoſitus ut rationes ſalvæ ſint."

The *cellerarius* was one of the four *obedientiarii*, or great officers of monaſteries: under his ordering was the *piſtrinum* or bakehouſe, und the *bracinum*, or brewhouſe. In the richer houſes there were particular lands ſet apart for the maintenance of his office, called in ancient writings *ad cibum monachorum*. The *cellerarius* was a great man in the convent. His whole office in ancient times had a reſpect to that origin: he was to ſee his lord's corn got in, and laid up in granaries; and his appointment conſiſted in a certain proportion thereof, uſually fixed at a thirteenth part

of

Cellarer || Celſus.

of the whole, together with a furred gown. The office of cellarer then only differed in name from thoſe of bailiff and minſtrel; excepting that the cellarer had the receipt of his lord's rents throughout the whole extent of his juriſdiction.

CELLARER was alſo an officer in chapters, to whom belonged the care of the temporals, and particularly the diſtributing of bread, wine, and money, to canons, on account of their attendance in the choir. In ſome places he was called *cellarer*, in others *burſer*, and in others *currier*.

CELLARIUS, CHRISTOPHER, was born in 1638, at Smalcade in Franconia, of which town his father was miniſter. He was ſucceſſively rector of the colleges at Weymar, Zeits, and Merſbourg: and the king of Pruſſia having founded an univerſity at Halle in 1693, he was prevailed on to be profeſſor of eloquence and hiſtory there, where he compoſed the greateſt part of his works. His great application to ſtudy haſtened the infirmities of old age; for it is ſaid, he would ſpend whole days and nights together at his books, without any attention to his health, or even the calls of nature. His works relate to grammar, geography, hiſtory, and the oriental languages; and the number of them is amazing. He died in 1707.

CELLINI, BENVENUTO, an eminent ſtatuary, who was bred a jeweller and goldſmith, but ſeems to have had an extraordinary genius for the fine arts in general. He was cotemporary with Michael Angelo and Julio Romano, and was employed by popes, kings, and other princely patrons of ſciences and arts, ſo highly cultivated in the days of Leo X. and Charles V. ſome of his productions being eſteemed moſt exquiſite. He lived to a very conſiderable old age; and his life, almoſt to the laſt, was a continued ſcene of adventure, perſecution, and misfortune, truly wonderful. He wrote his own hiſtory, which was not, however, publiſhed till the year 1730, probably on account of the exceſſive freedom with which he therein treated many diſtinguiſhed perſonages of Italy and other countries. It was tranſlated into Engliſh by Dr Nugent in 1771, to which the reader is referred, as it will not admit of an abridgement ſuitable to the deſign of this work.

CELLULAR, in a general ſenſe, is applied to any thing conſiſting of ſingle cells.

CELLULAR Membrane. See ANATOMY *Index*.

CELOSIA, COCKS COMB. See BOTANY *Index*.

CELSIA. See BOTANY *Index*.

CELSUS, AURELIUS CORNELIUS, a celebrated phyſician of the firſt century, who wrote eight books on medicine, in elegant Latin. He was the Hippocrates of the Latins; and Quintilian gives him a high eulogium. The great Boerhaave tells us, that Celſus is one of the beſt authors of antiquity for letting us into the true meaning and opinions of Hippocrates; and that without him, the writings of this father in phyſic would be often unintelligible, often miſunderſtood by us. He ſhows us alſo how the ancients cured diſtempers by friction, bathing, &c. His eight books *de Medicina* have been ſeveral times printed. The Elzevir edition, in the year 1650, by Vander Linden, is the beſt, as being entirely corrected from his manuſcripts.

CELSUS, an Epicurean philoſopher, in the ſecond century. He wrote a work againſt the Chriſtians, entitled, *The True Diſcourſe:* to which Origen, at the deſire of Ambroſe his friend, wrote a learned anſwer. To this philoſopher Lucian dedicated his *Pſeudomanies*. Celtæ.

CELTÆ, or CELTES, an ancient nation, by which moſt of the countries of Europe are thought to have been peopled. The compilers of the Univerſal Hiſtory are of opinion that they were deſcended from Gomer the eldeſt ſon of Japhet, the ſon of Noah. They think that Gomer ſettled in the province of Phrygia in Aſia; Aſhkenaz his eldeſt ſon, or Togarmah his youngeſt, or both, in Armenia; and Riphath the ſecond ſon in Cappadocia. When they ſpread themſelves wider, they ſeem to have moved regularly in columns without interfering with or diſturbing their neighbours. The deſcendants of Gomer, or the Celtæ, took the left hand, inſenſibly ſpreading themſelves weſtward towards Poland, Hungary, Germany, France, and Spain; while the deſcendants of Magog, Gomer's brother, moving eaſtward, peopled Tartary.

In this large European tract, the Celtes began to appear a powerful nation under a regular monarchy, or rather under ſeveral conſiderable kingdoms. Mention is made of them indeed in ſo many parts of Europe, by ancient geographers and hiſtorians, that Ortellius took *Celtica* to be a general name for the continent of Europe, and made a map of it bearing this title. In thoſe parts of Aſia which they poſſeſſed, as well as in the different parts of Europe, the Celtes went by various names. In Leſſer Aſia they were known by the names of *Titans* and *Sacks;* in the northern parts of Europe, by thoſe of *Cymmerians*, *Cymbrians*, &c.; and in the ſouthern parts they were called *Celtes*, *Gauls*, or *Galatians*.

With reſpect to the government of the Celtes we are entirely in the dark. All we know is, that the curates, and afterwards druids and bards, were the interpreters of their laws; judged all cauſes whether criminal or civil; and their ſentence was reckoned ſo ſacred, that whoever refuſed to abide by it was by them excluded from aſſiſting at their ſacred rites; after which no man dared converſe with him: ſo that this puniſhment was reckoned the moſt ſevere of all, even ſeverer than death itſelf.

They neither reared temples nor ſtatues to the Deity, but deſtroyed them wherever they could find them, planting in their ſtead large ſpacious groves; which, being open on the top and ſides, were, in their opinion, more acceptable to the divine Being, who is abſolutely unconfined. In this their religion ſeems to have reſembled that of the Perſees and diſciples of Zoroaſter. The Celtes only differed from them in making the oak inſtead of fire the emblem of the Deity; in chooſing that tree above all others to plant their groves with, and attributing ſeveral ſupernatural virtues both to its wood, leaves, fruit, and miſletoe; all of which were made uſe of in their ſacrifices and other parts of their worſhip. But after they had adopted the idolatrous ſuperſtition of the Romans and other nations, and the apotheoſis of their heroes and princes, they came to worſhip them much in the ſame manner; as Jupiter under the name of *Taran*, which in the Celtic ſignifies thunder; Mercury, whom ſome authors calls *Heus* or *Heſus*, probably from the Celtic *haudh*, which ſignifies a dog, and might be the *Anubis latrans*

Celtes, Celtiberia.

latrans of the Egyptians. But Mars was held in the greateſt veneration by the warlike, and Mercury by the trading, part of the nation. The care of religion was immediately under the curates, ſince known by the name of druids and bards. Theſe were, as Cæſar tells us, the performers of ſacrifices and all religious rites, and expounders of religion to the people. They alſo inſtructed youth in all kinds of learning, ſuch as philoſophy, aſtronomy, aſtrology, &c. Their doctrines were taught only by word of mouth, eſteeming them too ſacred to be committed to writing.—Other more common ſubjects, ſuch as their hymns to their gods, the exploits of princes and generals in time of war, and eſpecially before a battle, were couched in elegant verſe, and recited, or rather ſung, on all proper occaſions; though even theſe were alſo kept from vulgar eyes, and either committed to memory, or, if to writing, the whole was a ſecret to all the laity. The latter indeed ſeems the moſt probable, if what Cæſar hints be true; namely, that thoſe poetic records were increaſed in his time to ſuch a bulk, that it took up a young bard near 20 years to learn them by heart. Diodorus tells us farther, that theſe poets uſed to accompany their ſongs with inſtrumental muſic, ſuch as thoſe of organs, harps, and the like; and that they were held in ſuch veneration, that if in the time of an engagement between two armies, one of theſe bards appeared, both ſides immediately ceaſed fighting. The reaſon of this was, that they were univerſally believed to be prophets as well as poets; ſo that it was thought dangerous as well as injurious to diſobey what they ſuppoſed came from their gods. Theſe prophetic philoſophers kept academies, which were reſorted to not only by a great number of their own youth, but alſo of thoſe from other countries, inſomuch that Ariſtotle ſays, their philoſophy paſſed from thence into Greece, and not from Greece thither. Diodorus likewiſe quotes a paſſage from Hecateus, which is greatly in their praiſe; viz. that the druids had ſome kind of inſtruments by which they could draw diſtant objects nearer, and make them appear larger and plainer; and by which they could diſcover even ſeas, mountains, and valleys, in the moon. But whatever might be their learning, it is certain, that in proceſs of time they adopted ſeveral very barbarous cuſtoms, ſuch as ſacrificing human victims to their gods, as more acceptable to them than thoſe of any other animals. And Diodorus tells us of another inhuman cuſtom they uſed in their divinations eſpecially in great matters, which was done by killing ſome of their ſlaves, or ſome priſoners of war, if any they had, with a ſcimitar, to draw the augury from the running of his blood from his mangled limbs.

For the hiſtory, &c. of the different Celtic nations ſee the article GAUL, &c.

CELTES, certain ancient inſtruments of a wedge-like form, of which ſeveral have been diſcovered in different parts of Great Britain. Antiquarians have generally attributed them to the Celtæ; but not agreeing as to their uſe, diſtinguiſhed them by the above unmeaning appellation. But Mr Whittaker makes it probable that they were Britiſh battle-axes. See *BATTLE-AXE*.

CELTIBERIA, in *Ancient Geography*, a country of the Hither Spain, along the right or ſouth-weſt ſide of the river Iberus; though ſometimes the greateſt part of Spain was called by the name *Celtiberia*. The people were denominated *Celtiberi*, or the Celtæ ſeated on the Iberus. They were very brave and warlike; their cavalry in particular was excellent. They wore a black and rough cloak, the ſhag of which was like goats hair. Some of them had light bucklers like the Gauls: others hollow and round ones like thoſe of other nations. They all wore boots made of hair, and iron helmets adorned with creſts of a purple colour. They uſed ſwords which cut on both ſides, and poniards of a foot long. Their arms were of an admirable temper, and are ſaid to have been prepared in the following manner: they buried plates of iron under ground, where they let them remain till the ruſt had eaten the weakeſt part of the metal, and the reſt was conſequently hard and firm. Of this excellent iron they made their ſwords, which were ſo ſtrong and well tempered, that there was neither buckler nor helmet that could reſiſt their edge. The Celtiberians were very cruel towards their enemies and malefactors, but ſhowed the greateſt humanity to their gueſts. They not only cheerfully granted their hoſpitality to ſtrangers, who travelled in their country, but were deſirous that they ſhould ſeek protection under their roof.

Celtis, Cement.

CELTIS. See BOTANY *Index*.

CEMENT, in a general ſenſe, any glutinous ſubſtance capable of uniting and keeping things together in cloſe coheſion. In this ſenſe the word *cement* comprehends mortar, ſoder, glue, &c. but has been generally reſtrained to the compoſitions uſed for holding together broken glaſſes, china, and earthen ware. For this purpoſe the juice of garlic is recommended as exceedingly proper, being both very ſtrong, and, if the operation is performed with care, leaving little or no mark. Quicklime and the white of an egg mixed together and expeditiouſly uſed, are alſo very proper for this purpoſe. Dr Lewis recommends a mixture of quicklime and cheeſe in the following manner: "Sweet cheeſe ſhaved thin, and ſtirred with boiling-hot water, changes into a tenacious ſlime which does not mingle with the water. Worked with freſh particles of hot water, and then mixed upon a hot ſtone with a proper quantity of unſlacked lime, to the conſiſtence of a paſte, it proves a ſtrong and durable cement for wood, ſtone, earthen ware, and glaſs. When thoroughly dry, which will be in two or three days, it is not in the leaſt acted upon by water. Cheeſe barely beat with quicklime, as directed by ſome of the chemiſts for luting cracked glaſſes, is not near ſo efficacious." A compoſition of the drying oil of linſeed and white lead is alſo uſed for the ſame purpoſes, but is greatly inferior.

CEMENT, in building, is uſed to denote any kind of mortar of a ſtronger kind than ordinary. The cement commonly uſed is of two kinds; hot and cold. The hot cement is made of roſin, bees wax, brick duſt, and chalk boiled together. The bricks to be cemented are heated, and rubbed one upon another, with cement between them. The cold cement is that above deſcribed for cementing china, &c. which is ſometimes, though rarely, employed in building.

The ruins of the ancient Roman buildings are found to cohere ſo ſtrongly, that moſt people have imagined the

Cement. the ancients were acquainted with ſome kind of mortar, which, in compariſon of ours, might juſtly be called *cement;* and that to our want of knowledge of the materials they uſed, is owing the great inferiority of modern buildings in their durability. In 1770, one M. Loriot, a Frenchman, pretended to have diſcovered the ſecret of the ancient cement, which, according to him, was no more than a mixture of powdered *quicklime* with lime which had been long ſlacked and kept under water. The ſlacked lime was firſt to be made up with ſand, earth, brickduſt, &c. into mortar after the common method, and then about a third part of quicklime in powder was added to the mixture. This produced an almoſt inſtantaneous petrification, ſomething like what is called the *ſetting* of alabaſter, but in a much ſtronger degree; and was poſſeſſed of many wonderful qualities needleſs here to relate, ſeeing it has never been known to ſucceed with any other perſon who tried it. Mr Anderſon, in his eſſays on agriculture, has diſcuſſed this ſubject at conſiderable length, and ſeemingly with great judgment. He is the only perſon we know who has given any rational theory of the uſes of lime in building, and why it comes to be the proper baſis of all cements. His account is in ſubſtance as follows:

Lime which has been ſlacked and mixed with ſand, becomes hard and conſiſtent when dry, by a proceſs ſimilar to that which produces the natural *ſtalactites* in caverns. Theſe are always formed by water dropping from the roof. By ſome unknown and inexplicable proceſs of nature, this water has diſſolved in it a ſmall portion of calcareous matter in a *cauſtic* ſtate. As long as the water continues covered from the air, it keeps the earth diſſolved in it; it being the natural property of calcareous earths, when deprived of their fixed air, to diſſolve in water. But when the ſmall drop of water comes to be expoſed to the air, the calcareous matter contained in it begins to attract the fixable part of the atmoſphere. In proportion as it does ſo, it alſo begins to ſeparate from the water, and to reaſſume its native form of limeſtone or marble. This proceſs Mr Anderſon calls a *cryſtallization;* and when the calcareous matter is perfectly *cryſtallized* in this manner, he affirms, that it is to all intents and purpoſes limeſtone or marble of the ſame conſiſtence as before: and "in this manner (ſays he), within the memory of man, have huge rocks of marble been formed near Matlock in Derbyſhire." If lime in a cauſtic ſtate is mixed with water, part of the lime will be diſſolved, and will alſo begin to cryſtallize. The water which parted with the cryſtallized lime will then begin to act upon the remainder, which it could not diſſolve before; and thus the proceſs will continue, either till the lime be all reduced to an *effete*, or (as he calls it) *cryſtalline* ſtate, or ſomething hinders the action of the water upon it. It is this cryſtallization which is obſerved by the workmen when a heap of lime is mixed with water, and left for ſome time to macerate. A hard cruſt is formed upon the ſurface, which is ignorantly called *froſting*, though it takes place in ſummer as well as in winter. If therefore the hardneſs of the lime, or its becoming a cement, depends entirely on the formation of its cryſtals, it is evident that the perfection of the cement muſt depend on the perfection of the cryſtals, and the hardneſs of the matters which are entangled among them. The additional ſubſtances uſed in making of mortar, ſuch as ſand, brickduſt, or the like, according to Mr Anderſon, ſerve only for a purpoſe ſimilar to what is anſwered by ſticks put into a veſſel full of any ſaline ſolution, namely, to afford the cryſtals an opportunity of faſtening themſelves upon it. If therefore the matter interpoſed between the cryſtals of the lime is of a friable, brittle nature, ſuch as brickduſt or chalk, the mortar will be of a weak and imperfect kind; but, when the particles are hard, angular, and very difficult to be broken, ſuch as thoſe of river or pit ſand, the mortar turns out exceedingly good and ſtrong. Sea ſand is found to be an improper material for mortar, which Mr Anderſon aſcribes to its being leſs angular than the other kinds. That the cryſtallization may be the more perfect, he alſo recommends a large quantity of water, that the ingredients be perfectly mixed together, and that the drying be as ſlow as poſſible. An attention to theſe circumſtances, he thinks, would make the buildings of the moderns equally durable with thoſe of the ancients; and from what remains of the ancient Roman works, he thinks a very ſtrong proof of his hypotheſis might be adduced. The great thickneſs of their walls neceſſarily required a vaſt length of time to dry. The middle of them was compoſed of pebbles thrown in at random, and which have evidently had mortar ſo thin as to be *poured* in among them. By this means a great quantity of the lime would be diſſolved, and the cryſtallization performed in the moſt perfect manner; and the indefatigable pains and perſeverance for which the Romans were ſo remarkable in all their undertakings, leave no room to doubt that they would take care to have the ingredients mixed together as well as poſſible. The conſequence of all this is, that the buildings formed in this manner are all as firm as if cut out of a ſolid rock; the mortar being equally hard, if not more ſo, than the ſtones themſelves.

Notwithſtanding the bad ſucceſs of thoſe who have attempted to repeat M. Loriot's experiments, however, Dr Black informs us, that a cement of this kind is certainly practicable. It is done, he ſays, by powdering the lime while hot from the kiln, and throwing it into a thin paſte of ſand and water; which, not ſlacking immediately, abſorbs the water from the mortar by degrees, and forms a very hard maſs. "It is plain, he adds, that the ſtrength of this mortar depends on uſing the lime hot or freſh from the kiln."

By mixing together gypſum and quicklime, and then adding water, we may form a cement of tolerable hardneſs, and which apparently might be uſed to advantage in making troughs for holding water, or lining ſmall canals for it to run in. Mr Wiegley ſays, that a good mortar or cement, which will not crack, may be obtained by mixing three parts of a thin magma of ſlacked lime with one of powdered gypſum; but adds, that it is uſed only in a dry ſituation. A mixture of tarras with ſlacking lime acquires in time a ſtony hardneſs, and may be uſed for preventing water from entering. See MORTAR and STUCCO.

CEMENT, among engravers, jewellers, &c. is the ſame with the hot cement uſed in building *; and is uſed for keeping the metals to be engraven firm to the block, and alſo for filling up what is to be chiſſeled.

* See the foregoing article.

CEMENT, in *Chemiſtry*, is uſed to ſignify all thoſe powders

Cement ‖ Cenotaph.

powders and paſtes with which any body is ſurrounded in pots or crucibles, and which are capable by the help of fire of producing changes upon that body. They are made of various materials; and are uſed for different purpoſes, as for parting gold from ſilver, converting it into ſteel, copper into braſs: and by cementation more conſiderable changes can be effected upon bodies, than by applying to them liquids of any kind; becauſe the active matters are then in a ſtate of vapour, and aſſiſted by a very conſiderable degree of heat.

Cement which quickly hardens in water. This is deſcribed in the poſthumous works of Mr Hooke, and is recommended for gilding live craw fiſh, carps, &c. without injuring the fiſh. The cement for this purpoſe is prepared, by putting ſome Burgundy pitch into a new earthen pot, and warming the veſſel till it receives ſo much of the pitch as will ſtick round it, then ſtrewing ſome finely-powdered amber over the pitch when growing cold, adding a mixture of three pounds of linſeed oil, and one of oil of turpentine, covering the veſſel and boiling them for an hour over a gentle fire, and grinding the mixture as it is wanted with as much pumice ſtone in fine powder as will reduce it to the conſiſtence of paint. The fiſh being wiped dry, the mixture is ſpread upon it; and the gold leaf being then laid on, the fiſh may be immediately put into water again, without any danger of the gold coming off, for the matter quickly grows hard in the water.

Cement Pots, are thoſe earthen pots uſed in the cementation of metals.

CEMENTATION, the act of corroding or otherwiſe changing a metal by means of a Cement.

CEMETERY (Κοιμητηριον, from Κοιμαω, to "*ſleep;*") a place ſet apart or conſecrated for the burial of the dead.

Anciently none were buried in churches or churchyards: it was even unlawful to inter in cities, and the cemeteries were without the walls. Among the primitive Chriſtians theſe were held in great veneration. It even appears from Euſebius and Tertullian, that, in the early ages, they aſſembled for divine worſhip in the cemeteries. Valerian ſeems to have confiſcated the cemeteries and other places of divine worſhip, but they were reſtored again by Gallienus. As the martyrs were buried in theſe places, the Chriſtians choſe them for building churches on, when Conſtantine eſtabliſhed their religion; and hence ſome derive the rule which ſtill obtains in the church of Rome, never to conſecrate an altar without putting under it the relicks of ſome ſaint. The practice of conſecrating cemeteries is of ſome antiquity. The biſhop walked round it in proceſſion, with the croſier or paſtoral ſtaff in his hand, the holy water pot being carried before, out of which the aſperſions were made.

CENCHRUS. See Botany *Index*.

CENEGILD, in the Saxon antiquities, an expiatory mulct, paid by one who had killed a man to the kindred of the deceaſed. The word is compounded of the Saxon *cinne*, i. e. *cognatio*, "relation," and *gild*, *ſolutio*, "payment."

CENOBITE. See Coenobite.

CENOTAPH, in antiquity, an empty tomb, erected by way of honour to the deceaſed. It is diſtinguiſhed from a ſepulchre, in which a coffin was depoſited. Of theſe there were two ſorts; one for thoſe who had, and another for thoſe who had not, been honoured with funeral rites in another place.

Cenſer ‖ Cenſor.

The ſign whereby honorary ſepulchres were diſtinguiſhed from others, was commonly the wreck of a ſhip, to denote the deceaſe of the perſon in ſome foreign country.

CENSER, in antiquity, a vaſe containing incenſe to be uſed in ſacrifices. Cenſer is chiefly uſed in ſpeaking of the Jewiſh worſhip. Among the Greeks and Romans it is more frequently called *thuribulum*, λιβανωτις, and *acerra*.

The Jewiſh cenſer was a ſmall ſort of chafing diſh, covered with a dome, and ſuſpended by a chain. Joſephus tells us, that Solomon made 20,000 gold cenſers for the temple of Jeruſalem, to offer perfumes in, and 50,000 others to carry fire in.

CENSIO, in antiquity, the act or office of the cenſor. See Census.

Cenſio included both the rating or valuing a man's eſtate, and the impoſing mulcts and penalties.

Censio haſtaria, a puniſhment inflicted on a Roman ſoldier for ſome offence, as lazineſs or luxury, whereby his *haſta* or ſpear was taken from him, and conſequently his wages and hopes of preferment ſtopped.

CENSITUS, a perſon cenſed, or entered in the cenſual tables. See Census.

In an ancient monument found at Ancyra containing the actions of the emperor Octavius, we read,

Quo luſtro civium Romanorum
Cenſita ſunt capita quadragies
Centum millia et ſexaginta tria.

Censitus is alſo uſed in the civil law for a ſervile ſort of tenant, who pays capitation to his lord for the lands he holds of him, and is entered as ſuch in the lord's rent roll. In which ſenſe, the word amounts to the ſame with *capite cenſus*, or *capite cenſitus*. See *Capite Cenſi*.

CENSOR, (from *cenſere* to "think" or "judge),"" one of the prime magiſtrates in ancient Rome.—Their buſineſs was to regiſter the effects of the Roman citizens, to impoſe taxes in proportion to what each man poſſeſſed, and to take cognizance or inſpection of the manners of the citizens. In conſequence of this laſt part of their office, they had a power to cenſure vice or immorality, by inflicting ſome public mark of ignominy on the offender. They had even a power to create the *princeps ſenatus*, and to expel from the ſenate ſuch as they deemed unworthy of that office. This power they ſometimes exerciſed without ſufficient grounds; and therefore a law was at length paſſed, that no ſenator ſhould be degraded or diſgraced in any manner, until he had been formally accuſed and found guilty by both the cenſors. It was alſo a part of the cenſorian juriſdiction, to fill up the vacancies in the ſenate, upon any remarkable deficiency in their number; to let out to farm all the lands, revenues, and cuſtoms, of the republic; and to contract with artificers for the charge of building and repairing all the public works and edifices both in Rome and the colonies of Italy. In all parts of their office, however, they

Cenſors ‖ Cenſure.

they were ſubject to the juriſdiction of the people; and an appeal always lay from the ſentence of the cenſors to that of an aſſembly of the people.

The firſt two cenſors were created in the year of Rome 311, upon the ſenate's obſerving that the conſuls were ſo much taken up with war as not to have time to look into other matters. The office continued to the time of the emperors, who aſſumed the cenſorial power, calling themſelves *morum præfecti;* though Veſpaſian and his ſons took the title of cenſors. Decius attempted to reſtore the dignity to a particular magiſtrate. After this we hear no more of it, till Conſtantine's time, who made his brother cenſor, and he ſeems to have been the laſt that enjoyed the office.

The office of cenſor was ſo conſiderable, that for a long time none aſpired to it till they had paſſed all the reſt; ſo that it was thought ſurpriſing that Craſſus ſhould be admitted cenſor, without having been either conſul or prætor. At firſt the cenſors enjoyed their dignity for five years, but in 420 the dictator Mamercus made a law reſtraining it to a year and a half, which was afterwards obſerved very ſtrictly. At firſt one of the cenſors was elected out of a patrician, and the other out of a plebeian family; and upon the death of either, the other was diſcharged from his office, and two new ones elected, but not till the next luſtrum. In the year of Rome 622, both cenſors were choſen from among the plebeians; and after that time the office was ſhared between the ſenate and people.—After their election in the Comitia Centuriata, the cenſors proceeded to the capitol, where they took an oath not to manage either by favour or diſaffection, but to act equitably and impartially throughout the whole courſe of their adminiſtration.

The republic of Venice ſtill has a cenſor of the manners of their people, whoſe office laſts ſix months.

Censors of Books, are a body of doctors or others eſtabliſhed in divers countries to examine all books before they go to the preſs, and to ſee they contain nothing contrary to faith and good manners.

At Paris, before the late revolution, the faculty of theology claimed this privilege as granted to them by the pope; but, in 1624, new commiſſions of four doctors were created, by letters patent, the ſole cenſors of all books, and anſwerable for every thing contained therein.

In England, we had formerly an officer of this kind, under the title of licenſer of the preſs: but, ſince the Revolution, our preſs has been laid under no ſuch reſtraint.

CENSORINUS, a celebrated writer in the third century, well known by his treatiſe *De Die Natali*. This treatiſe, which was written about the year 238, Gerard Voſſius calls a little book of gold; and declares it to be a moſt learned work, of the higheſt uſe and importance to chronologers, ſince it connects and determines, with great exactneſs, ſome of the principal eras in pagan hiſtory. It was printed at Cambridge, with the notes of Lindenbrokius, in 1695.

CENSURE, a judgment which condemns ſome book, perſon, or action, or more particularly, a reprimand from a ſuperior. Eccleſiaſtical cenſures are penalties, by which, for ſome remarkable miſbehaviour, Chriſtians are deprived of the communion of the church, or prohibited to exerciſe the ſacerdotal office.

Cenſus.

CENSUS, in Roman antiquity, an authentic declaration made before the cenſors, by the ſeveral ſubjects of the empire, of their reſpective names and places of abode. This declaration was regiſtered by the cenſors; and contained an enumeration, in writing, of all the eſtates, lands, and inheritances they poſſeſſed; their quantity, quality, place, wives, children, domeſtics, tenants, ſlaves. In the provinces the cenſus ſerved not only to diſcover the ſubſtance of each perſon, but where, and in what manner and proportion, taxes might be beſt impoſed. The cenſus at Rome is commonly thought to have been held every five years; but Dr Middleton hath ſhown, that both cenſus and luſtrum were held irregularly and uncertainly at various intervals. The cenſus was an excellent expedient for diſcovering the ſtrength of the ſtate; for by it they diſcovered the number of the citizens, how many were fit for war, and how many for offices of other kinds; how much each was able to pay of taxes, &c. It went through all ranks of people, though under different names: that of the common people was called *cenſus;* that of the knights, *cenſus, recenſio, recognitio;* that of the ſenators, *lectio, relectio*.—Hence alſo *cenſus* came to ſignify a perſon who had made ſuch a declaration; in which ſenſe it was oppoſed to *incenſus*, a perſon who had not given in his eſtate or name to be regiſtered.

The cenſus, according to Salmaſius, was peculiar to the city of Rome. That in the provinces was properly called *profeſſio* and απογραφη. But this diſtinction is not everywhere obſerved by the ancients themſelves.

Census was alſo uſed for the book or regiſter wherein the profeſſions of the people were entered: In which ſenſe, the cenſus was frequently cited and appealed to as evidence in the courts of juſtice.

Census is alſo uſed to denote a man's whole ſubſtance or eſtate.

Census Senatorius, the patrimony of a ſenator, which was limited to a certain value; being at firſt rated at 800,000 ſeſterces, but afterwards, under Auguſtus, enlarged to 1,200,000.

Census Equeſter, the eſtate or patrimony of a knight, rated at 400,000 ſeſterces, which was required to qualify a perſon for that order, and without which no virtue or merit was available.

Census was alſo uſed for a perſon worth 100,000 ſeſterces, or who was entered as ſuch in the cenſual tables, on his own declaration. In which ſenſe, cenſus amounts to the ſame with *claſſicus*, or a man of the firſt claſs; though Gellius limits the eſtate of thoſe of this claſs to 125,000 aſſes. By the Voconian law, no cenſus was allowed to give by his will above a fourth part of what he was worth to a woman.

Census was alſo uſed to denote a tax or tribute impoſed on perſons, and called alſo capitation. See *Capite Cenſi*.

Census Dominicatus, in writers of the lower age, denotes a rent due to the lord.

Census Duplicatus, a double rent or tax, paid by vaſſals to their lord on extraordinary or urgent occaſions; as expeditions to the Holy Land, &c.

Census Eccleſiæ Romanæ, was an annual contribution voluntarily paid to the ſee of Rome by the ſeveral princes of Europe.

Cent || Centenarius.

CENT, ſignifies properly a hundred, being an abridgement of the word *centum;* but is often uſed in commerce to expreſs the profit or loſs ariſing from the ſale of any commodity: ſo that when we ſay there is 10 *per cent.* profit, or 10 *per cent.* loſs, upon any merchandiſe that has been ſold, it is to be underſtood that the ſeller has either gained or loſt 10l. on every 100l. of the price at which he bought that merchandiſe; which is $\frac{1}{10}$ of profit, or $\frac{1}{10}$ of loſs, upon the total of the ſale.

CENTAUR, in *Aſtronomy*, a part or moiety of a ſouthern conſtellation, in form half man half horſe; uſually joined with the wolf. The word comes from κενταυρος, formed of κεντεω, *pungo;* and ταυρος, *bull;* q. d. *bull-pricker*. The ſtars of this conſtellation, in Ptolmey's Catalogue, are 37; in Tycho's 4; and in the Britannic Catalogue, with Sharp's Appendix, 35.

CENTAURS, in *Mythology*, a kind of fabulous monſters, half men and half horſes.—The poets pretend that the centaurs were the ſons of Ixion and a cloud; the reaſon of which fancy is, that they retired to a caſtle called νεφελη, which ſignifies "a cloud."—This fable is differently interpreted: ſome will have the centaurs to have been a body of ſhepherds and herdſmen, rich in cattle, who inhabited the mountains of Arcadia, and to whom is attributed the invention of bucolic poetry. Palæphætus, in his book of incredibles, relates, that under the reign of Ixion, king of Theſſaly, a herd of bulls on Mount Theſſaly run mad, and ravaged the whole country, rendering the mountains inacceſſible; that ſome young men who had found the art of taming and mounting horſes, undertook to clear the mountains of theſe animals, which they purſued on horſeback, and thence obtained the appellation of *Centaurs*. This ſucceſs rendering them inſolent, they inſulted the Lapithæ a people of Theſſaly: and becauſe when attacked they fled with great rapidity, it was ſuppoſed they were half horſes and half men.—The Centaurs in reality were a tribe of Lapithæ, who inhabited the city Pelethronium adjoining to Mount Pelion, and firſt invented the art of breaking horſes, as is intimated by Virgil.

CENTAUREA, GREATER CENTAURY. See BOTANY *Index*. There are 61 ſpecies belonging to this genus. The root of one of them called *glaſtifolia*, is an article in the materia medica. It has a rough, ſomewhat acrid taſte, and abounds with a red viſcid juice. Its rough taſte has gained it ſome eſteem as an aſtringent, its acrimony as an aperient, and its glutinous quality as a vulnerary: but the preſent practice takes very little notice of it in any intention. Another of the ſpecies is the cyanus or blue bottle, which grows commonly among corn. The expreſſed juice of this flower ſtains linen of a beautiful blue colour, but is not permanent. Mr Boyle ſays, that the juice of the inner petals, with a little alum, makes a beautiful permanent colour, equal to ultramarine.

Leſſer CENTAURY. See GENTIANA, BOTANY *Index*.

CENTELLA. See BOTANY *Index*.

CENTENARIUS, or CENTENARIO, in the middle age, an officer who had the government or command, with the adminiſtration of juſtice, in a village. The centenarii as well as vicarii were under the juriſdiction and command of the court. We find them among the Franks, Germans, Lombards, Goths, &c.

CENTENARIUS was alſo uſed for an officer who had the command of 100 men, moſt frequently called a CENTURION.

Centenarius || Center.

CENTENARIUS, in monaſteries, was an officer who had the command of 100 monks.

CENTENINUM OVUM, among naturaliſts, denotes a ſort of hen's egg much ſmaller than ordinary, vulgarly called a *cock's egg;* from which it has been fabulouſly held that the cockatrice or baſiliſk is produced. The name is taken from an opinion, that theſe are the laſt eggs which hens lay, having laid 100 before; whence *centeninum*, q. d. the hundredth egg.—Theſe eggs have no yolks, but in other reſpects differ not from common ones, having the albumen, chalazes, membranes, &c. in common with others. In the place of the yolk is found a little body like a ſerpent coiled up, which doubtleſs gave riſe to the fable of the baſiliſk's origin from thence. Their origin is with probability aſcribed by Harvey to this, that the yolks in the vitellary of the hen are exhauſted before the albumina.

CENTER, or CENTRE, in a general ſenſe, ſignifies a point equally diſtant from the extremities of a line, figure, or body. The word is formed from the Greek κεντρον, a *point*.

CENTER of an Arch. Under the article BRIDGE, the different forms of arches have been particularly conſidered.

Under this article, it comes very properly to be aſcertained in what manner the arch-ſtones are ſupported till the arch is completed; and the moſt commodious, and leaſt expenſive manner, in which this can be accompliſhed. When the ſpan is ſmall, and upon a limited ſcale, as cellars, and vaults below ground, the foundation of the ſide-walls is dug out, the earth rounded off betwixt, the arch thrown over upon it, and the earth is afterwards dug out and carried away. This muſt have been done on any account. By this method the wood and workmanſhip are ſaved; but it is only in particular inſtances that this can be done. When the arch to be caſt is on land, and at no great height above the ſurface of the earth, a frame for ſupporting the arch-ſtones can be raiſed from the earth, and bound together, frequently, with a great profuſion of wood, which on account of the ſmallneſs of the arch is not taken into account; but, when the ſpan is great, or at a great height above the ſurface of the earth, the expence of a frame formed in the ſame manner, would be enormous, and in many caſes impracticable; but whether the arch be great or ſmall, high or low, a proper economy ought to be obſerved; and the leſs the expence in wood and workmanſhip incurred, ſo much the more advantage to thoſe concerned, and the purpoſe being obtained, ſo much more credit is due to the engineer.

It is again to be conſidered, on the other hand, that in order to ſave ſome expence, either in wood or workmanſhip, the frame or center, as we ſhall call it, is made too ſlight and ſo unconnected in its parts, that the preſſure of the arch-ſtones is greater than it can ſupport. The whole work is brought down, and the ſaving on the one part produces a more ſerious loſs on the other, ſo that both the workmen and proprietors agree, that it is better that the centre be too ſtrong than too weak; better have too much wood in it than

Center. too little. To aſſiſt the mechanic in this important affair, is the deſign of treating this article with particular attention; for which purpoſe we ſhall be at pains to acquire every aſſiſtance that can be collected, from the moſt experienced engineers, and from the reſearches and experiments of the moſt diſtinguiſhed philoſophers who have treated of ſuch arts as may enable us to elucidate the ſubject, and make it worth the attention of engineers and mechanics who may have occaſion to exert their genius in that line.

In the firſt place, it will be neceſſary to conſider the weight to be ſupported: 2dly, The quantity of the materials to be uſed, that ſhall be of ſtrength ſufficient to ſupport ſuch a weight: 3dly, The moſt effective method to apply theſe materials, as ſupported by the moſt approved authorities, or practiſed by the ableſt engineers. The weight to be ſupported is the arch-ſtones. Suppoſe an arch of 20 feet ſpan, (ſee figures for the arches, a new figure being unneceſſary). It has been ſhown under the article BRIDGE, that the arch can be raiſed to 30 degrees and upwards, without the ſupport of the center; after which it begins to reſt upon the frame of which the center is compoſed, if the arch is a ſemicircle, or ſemiellipſe; if a ſegment of a circle, it will preſs ſooner upon the centre, and the more ſo the flatter the arch is. 1ſt, Suppoſe a ſemicircle; then there is 120 degrees of the arch, to be ſupported by the center, the diameter ſuppoſed is 20 feet. One hundred and twenty degrees will meaſure 20.94393 feet; but as it is adviſable to give the advantage to the centre, we call it 21 feet in an arch of 20 feet ſpan. If the ſtone is of a durable and hard quality, perhaps an arch-ſtone of 12 or 14 inches might be of ſufficient ſtrength; yet it is not probable that any one would think of leſs than 18 inches for the thickneſs of the arch; for it will not have too heavy an appearance if it ſhould be two feet thick. We ſhall calculate the weight at 18 inches ſquare; the thickneſs of the ſtone is not here to be conſidered, as the weight of the whole is to be ſupported till the key-ſtone is driven: the ſpecific gravity of good freeſtone is 2.532, the ſolid feet in an arch of 120 degrees; the ſpan 20 feet is 21 feet, nearly as above. The ſtone 18 inches ſquare by 21 feet gives 47.25 ſolid feet; the weight by the above ſpecific gravity is 7477.3076 lb. averdupoiſe, about 66.753 cwt. being the weight that one rib of the center frame muſt ſuſtain, without warping, or by the preſſure on its haunches make it riſe in the crown; neither muſt it ſink under the preſſure: in either caſe the conſequences would be fatal, either in cauſing the arch to give way, upon ſtriking out the center, or in weakening it in ſuch a manner as to ſhorten its durability; being twiſted in its ſhape, the equilibrium would be deſtroyed, and the conſequence would be either to ſpring the key-ſtone, or, if that was prevented by the weight above it, the ſame weight would cauſe it yield at about, or a little above, 30 degrees from the ſpring of the arch. From all which the neceſſity of the ſtrength and firmneſs of the center frame is evident.

If the arch exceeds 20 feet, ſuppoſe 50, the weight will evidently become greater, and an additional ſtrength neceſſary on that account; and likewiſe on account of its greater extent, the frame that would be ſufficiently firm at 20 feet, would be ſupple at 50. To prevent any error on this account, another calculation for 50 feet will become neceſſary. In the ſpan of 50 the arch of 120 degrees meaſures 52.36 feet; ſuppoſe the arch-ſtone 2½ feet deep by 2, is five ſuperficial feet, multiplied by 52.36 is 261.8 ſolid feet, and at the above ſpecific gravity gives 41429.7154748lb. averdupoiſe, equal to 369.908 cwt. Here the weight is increaſed upon the center frame, in the proportion of 66.5 to 369.9, that is, more than five times, beſides what allowance will be neceſſary to make, for the difference of the ſtiffneſs of the center frame; both which will be conſidered in their proper places. Center.

Let us now conſider what will be the increaſe of weight upon a ſpan of 100 feet. The riſe of the arch, before it preſſes on the center-frame in a ſemicircle, being in the ſame proportion; the arch of 120 degrees in a 100 feet ſpan, meaſures 104.719 feet; the arch-ſtone may be ſuppoſed abundantly ſtrong of 4 feet length, for the depth of the arch, and 3 feet broad, which makes a ſuperficies of 12 feet, and multiplied by 104.719 gives 1256,628 ſolid feet, the ſpecific gravity, that is, the ſtone is ſuppoſed of the ſame durability gives 198,861.381 lb. averdupoiſe, equal to 1775.548 cwt. about five times more weight than upon the arch of 50 feet ſpan. If the arch is 130 feet ſpan; 120 degrees meaſure 136.13556 feet. Suppoſe the arch-ſtone 5 feet, as in the arch-ſtones of the bridge over the Dee at Aberdeen, at leaſt they are between 4½ and 5 feet. The Aberdeen granite is a very hard ſtone, and perhaps exceeds the ſpecific gravity above. The arch-ſtone is here ſuppoſed to be 5 feet by 3, equal to 15 ſquare feet, multiplied by 136.13556, gives 2042.0334 ſolid feet. According to the above ſpecific gravity, the weight to be ſupported till the key-ſtone is drove, is 2885.2838 cwt. The weight of the key-ſtone in the whole of the above may be deducted.

As center frames muſt likewiſe be uſed for iron bridges, we ſhall conſider them, and take the ſpan 236 feet, ſtill ſupporting a ſemicircle.

It may be proper to take the weight that it would be if the arch were the ſegment of a circle, the ſpan of the arch 236, the height above the ſpring of the arch, or the verſed-ſine of the arch, 34 feet, in which caſe the diameter of the circle would be 444 feet nearly; the arch-ſtones in this ſegment would preſs upon the center-frame, at about 18 feet from the ſpring of the arch. Suppoſe the arch-ſtone 5 feet by 4, equal to 20 ſuperficial feet, the whole meaſure of the arch is 444.154 lineal feet, the ſolid content is 4131.84 feet, and weight 318.689 tons; but the weight of the iron was only 260 tons. It may not be improper here to obſerve, that in a ſtone bridge of that ſpan, 5 feet of arch-ſtone would be too ſmall to ſuſtain the arch. It may perhaps be admitted, that it would be ſufficient to ſupport its own weight; and if ſo, the arch being ſmoothed above, a ſecond arch of a five-feet ſtone may be thrown over above it. Theſe two together may form a ſtronger arch than a ſtone of ten feet depth would do. And thus a ſtone arch may be extended to any ſpan, and made of abundant ſtrength; and experience has ſhown its durability to withſtand the weather. Thus the old London bridge has performed its faithful ſervices to the public for 600 years: that it was an incumbrance in paſſing up and down

Center. the river, and clumſy in its conſtruction, were owing to the taſte of the times; perhaps few will be found that would be willing to inſure an iron bridge againſt the ruin occaſioned by the weather, for the ſame time, or perhaps much above one-half that time. But this is not a fit place to enter into the full diſcuſſion of this ſubject. To return to the weight preſſing upon a center-frame. Having now taken a view of the weight to be ſupported, it comes next to be conſidered what ſtrength of wood is neceſſary to reſiſt this force; and the moſt proper and commodious manner of combining the parts. To determine this, we muſt have recourſe to ſuch experiments as have been made for trying the ſtrength of different ſpecies of ſtone and wood.

Experiments have been made to aſcertain the ſtrength of timber, and many of them appear to have been conducted with great care and attention. Some of theſe the reader will find collected and detailed under the article *Strength of Materials*. We ſhall here ſtate the reſult of ſome of the curious experiments which were inſtituted by the Count de Buffon to aſcertain this point. According to theſe experiments, the batten of five inches ſquare, whoſe length was 14 feet, and which ſupported a weight of 5300, which may be called its breaking force, ſhould have double the ſtrength of a batten of 28 feet long. But it has a great deal more. The latter by the experiment is equal to 1775 only; whereas the half of 5300 is 2650. But it is to be conſidered, that the power of the lever is in proportion to its diſtance from the fulcrum; this power ariſing from the weight of the log, is the weight of one foot of wood, acting as a weight at a diſtance from the fulcrum. The log increaſes in its power to break by its length: 12 inches of this log, five inches ſquare, weighs about 10.4lb. ſomewhat more or leſs; and 10.4lb. at 13 feet diſtance, acts with a force of 135.2lb.: this we conſider the laſt term; and 0, the point of fracture, is the firſt term: the firſt and laſt term, multiplied by half the number of terms, are equal to the ſum of all the terms; that is, $135.2 \times 6\frac{1}{2}$, amount 878.8lb. added to 1775, equal 2653.8; ſo near to the half, that the difference may eaſily be accounted for, from the real weight of the wood, on which the experiment was made; and our taking the weight from tables of ſpecific gravity, or the ſuppoſed 60lb. To take another example, a batten of nine feet is double the ſtrength of one of the ſame ſize, of 18 feet long. The weight that breaks a batten of nine feet, five inches ſquare, is 8308lb.; the half is 4154, but by the experiment, 3700lb. break the batten at 18 feet. N. B. The weight being laid upon the middle, $9\frac{1}{2}$ is the number of terms, one-half is 4.625. Seventeen feet one-half is $8\frac{1}{2}$; 10.4lb. multiplied by $8\frac{1}{2}$, is 102×4.625, half the number of terms, is $471.25 + 3700$, is 4171.25, ſomewhat greater, but which is ſo near, that the ſmalleſt accident for failure, not diſcernible in the wood, will occaſion the difference. Now to reduce the experiment of this given ſize, to any other of greater dimenſions; ſuppoſe one foot: ſimilar ſolids of the ſame altitude, are to one another as their baſes, that is 25, the baſe of the five inch ſquare, is to 144, the baſe of the 12 inch ſquare; as the weight that would break the batten of nine feet, to the weight that will break another of the ſame nine feet length, and of one foot ſquare (5. 6. El. 12), that is, as the baſe 25 is to the weight 8308, ſo is 144 to 47854lb.; equal 213.8125 ton, and the proportion as above, for greater or leſs length of logs or ſpars. As we have no experiments made of logs of 12 inches ſquare; unleſs there is ſomething in the texture of the fibres, in pieces of different diameters, we have every reaſon to conclude, the above proportion will give the proper ſtrength of the material uſed. It muſt, however, not be forgot, that the pieces upon which the experiments were made, were nicely choſen for the purpoſe. It will ſcarcely be practicable to find a piece of 12 inches ſquare, and even of nine feet length, equally well adapted to bear a proportionable ſtrain; and much more difficult to find a piece of ſtill greater length. Theſe experiments and proportions afford a ſafe criterion for proper limits to be attended to in practice. In this, we do not mean to apply ſuch a load upon the beam as will break it; we intend the beam to ſupport the load, without giving way or yielding to it. Center.

In the ſame experiments, we are told by the author, that two-thirds of the weight broke the beam in the ſpace of two months; that one-half the weight gave a ſet or bend which it did not recover, but ſhewed no farther tendency to break: that one-third of the weight, after long continuance, did not give it a ſet; but the weight being removed, the beam returned to the ſame poſition as before it was loaded. Betwixt one-third, and the half of load or weight that would break the beam, is the ſtrength we allot to it for permanent uſe. Before we proceed to put the above obſervations into full practice, let us examine whether the log is neceſſary to be ſquare to give it the greateſt ſtrength: practice, in a great meaſure, determines that it is not. It is, however, neceſſary to inquire what breadth to a given depth is ſufficient as a *maximum* that we ought not to exceed; or what is the *minimum* that we may uſe, ſo as not to loſe the principal intended effect. Belidor, has made a ſeries of experiments on the tranſverſe ſtrength of bodies which are detailed in his *Science des Ingenieurs*, but the ſpars are only of one inch, not exceeding two inches in breadth or thickneſs. Among theſe, we ſelect one ſpar two inches breadth, one inch depth, and 18 inches length; which at the *medium* of three trials, was broken, lying looſe at both ends, by 805lb. Another one inch broad, two inches deep, and 18 inches long, broke with the force of 1580lb.; nearly in the proportion of the ſquare of the depth, being only a diminution of 20lb. weight. In the preſent caſe, the quantity of matter is the ſame in both.

It may therefore be concluded from this experiment, that a batten of any depth, and one-half breadth, is equally ſtrong in that poſition, as if it had been ſquare timber; and that the ſtrength is according to the depth, if the breadth is only ſuch as that it does not yield in that direction. And hence, the advantage in point of economy; for if the piece is ſet upon its edge, ſuppoſe nine inches deep and one broad, provided that by ſtraining the piece in depth, it ſhall not yield in the lateral direction, it will bear as much ſtrain as if nine inches ſquare. The experiment may be performed upon a ſmall ſcale. Suppoſe five inches, and one inch broad, the thin ſection may be encloſed at different diſtances with pieces five inches ſquare. Suppoſe at the diſtances of 1, 2, 3, &c. fig. 1. Plate CXXXVIII. and the weight applied that broke the five inch ſquare of the length of 14 feet, viz. 5300lb.

All

Center. All the experiments which have been alluded to above were made upon ſcantlings of found oak. But it has already been obſerved, that in practice, ſuch pieces cannot always, if at all, be ſelected. But the practical mechanic, confining himſelf to between one-third and one-half of the abſolute ſtrength, according as his judgment directs him, reſpecting the ſoundneſs of the piece he uſes; there can be no doubt, that, upon occaſions, he will be convinced, that he cannot, with ſafety, allow even one-third of the abſolute ſtrength, but muſt take it conſiderably below that proportion.

As to other ſpecies of wood, trials have alſo been made; and the reſult from different experiments has occaſioned ſome deviation. We are told that Buffon makes fir about $\frac{6}{10}$ths of the ſtrength of oak; Parent $\frac{1}{1}\frac{0}{2}$ths; and Emerſon $\frac{2}{3}$ds, all of them different. The difference between Buffon and Parent is $\frac{1}{10}$th; between Parent and Emerſon is $\frac{1}{6}$th; and between Buffon and Emerſon is $\frac{1}{3}$th. It is eaſy to conceive, that the different ſtates of the wood, and different circumſtances in the ſame ſpecies of fir and oak, will make a conſiderable difference; although the ſame perſons were employed on the ſame materials, the experiments would probably vary; much more, may it be allowed that at different times different ſtates of the wood muſt make the reſults different.

The experiments made by different perſons vary in their amount. Belidor's experiments agree one part with another, and ſo do Buffon's, but differ in their reſults from Belidor's. Belidor's ſlips of oak are only of one inch ſquare, and Buffon's are from four to eight inches ſquare, and from 7 to 28 feet in length. When the one is reduced to the ſtandard of the other, they do not agree: the difference may ariſe from various cauſes. We know that there is a difference in the ſtrength of oak of different growths, and from different ſoils, as well as in other ſpecies of wood; there is likewiſe a difference in the degree of ſeaſoning of the wood. Buffon gives the weight of his wood, Belidor does not. If Buffon's log or batten, four inches ſquare, weighs about 60lb. that is, about 77lb. the ſolid foot; whereas a ſolid foot of dry oak will not weigh above 60lb.: but Buffon acknowledges that his wood was in the ſap, as vapours iſſued at both ends in the bending. Theſe differences may make all the odds in the breaking, unleſs the proportion was eſtabliſhed to be, as the ſquares of the diameter of the battens; but this is not the caſe, for in Buffon's Experiments, the ſquare of four, to the ſquare of five of the ſeven feet batten, the breaking force is 8300lb.; but the experiment gives it 11525; that of ſix inches ſquare 16:36::5312.11952; exp. 18950. In the ſeven inch ſquare 16:49.5312.16268; exp. 32200. In the eight inch ſquare 16.64.5312:21248; exp. 47649, the difference between four and five inch ſquare is one-third part of the experiment weight; the difference between the four and ſix, is ſomewhat more than one-third the experiment weight; and in the ſeventh, the difference is a little leſs than half the experiment weight; between the ſeventh and the eighth the difference is greater than half the experiment weight.

There is likewiſe a difference at the different lengths; for it does not appear that the different lengths bear a proportion to their parts; a batten of four inches ſquare of ſeven feet length, is expected to be double the ſtrength of one of the ſame dimenſions of 14 feet length, that is, the one of 14 feet length, is expected to break with one half of the weight, that breaks the ſeven feet batten; but we find it much leſs; but when it is conſidered that the weight of the materials acting at a greater diſtance from the centre of motion, this muſt be taken into the account, and added to the weight of the breaking force. For example, the batten of five inches ſquare and 12 inches length, weighs 13.368lb. at the rate of 77lb. per ſolid foot. This weight, acting upon the batten of 14 feet, taking the amount of the whole in an arithmetical ratio, is $13.368 \times 52\frac{1}{2} = 701.5$lb. acting upon the whole, added to 5300, the breaking force 6001. The breaking force, at ſeven feet, is 11525, one half is 5762.2.5 one twenty-fourth part greater than the half. The batten of ſix inches ſquare, the breaking force at 14 feet is 7475, the weight of 12 inches of this batten is 19.25lb. at 77lb. per ſolid foot; the acting force of this weight at 14 feet length is $19.25 \times 52\frac{1}{2}$, is 1010.625, added to 7475, equal to 8485625. Now the breaking force of ſeven feet length, is 18950; one half is 9475, the difference is 989, that is, nine and a half times leſs than the half. In the ſeven inch batten of ſeven feet length, the breaking force is 32,200lb. and of 14 feet length, the breaking force is 13,225. The weight of 12 inches of the ſeven inch ſquare is 26.2lb. acting upon the 14 feet length, is 1370.5+1322.5= 14600lb. which is one-ninth leſs than the half. Again, 12 inches of the eight inch batten, weighs 34.2lb. at 77lb. per ſolid foot, acting upon the 14 feet length, is 1796lb. added to 19775, the force that broke it at 14 feet length, is 21575lb. about one-tenth part leſs than the half of 47,649lb. which broke it at ſeven feet length. From the above compariſon, it may be allowed, that the difference of the force that broke the ſpar at ſeven feet, and that which broke it at 14, ſo far as it differs from the half, is accounted for upon philoſophical principles; and when we conſider that the ſpars or batons cannot be ſuppoſed to be mathematically exact in their meaſure, and that a difference in point of breaking, may be accounted for from that cauſe; but further, it may be obſerved that the weight of the materials is not equal in the ſolid foot. For example, the ſpar four inches ſquare, and ſeven feet in length, weighs 60lb.; that is, at the rate of 77.14lb. per ſolid or cubic foot, the eight feet ſpar at the rate of 76.5lb do.; the nine feet ſpar at the rate of 77 feet; the 10 feet ſpar at the rate of 75.6; the 12 feet ſpar at the rate of 75lb. per cubic foot; which difference of weight, with the difference of exact mathematical meaſure, may fully account for all the difference that takes place in the manner of accounting for the above-mentioned difference of the weights of breaking, at 7 and 14 feet; as alſo the difference that takes place between 8 and 16; 9 and 18, &c. the experiments being made upon green wood, cannot be approved of: they ought to have been made of ſuch ſeaſoned wood as is fitted for mechanical purpoſes, of which none of this kind can be uſed; or if experiments are made with unſeaſoned wood, as being of the greateſt ſtrength, they ought likewiſe to have been made with dry wood ſeaſoned for uſe. A cubic foot of dry oak,

Center. oak, will not weigh much above 60lb. Thoſe ſpars upon which the experiments were made, muſt have been very green, and very unfit for mechanical purpoſes, which gives an unfair account of the ſtrength, when in a proper ſtate for uſe. But experiments were made with wood of different weights, which may be ſuppoſed better ſeaſoned. For example, the ſeven feet ſpar that weighs 56lb. that is, 72lb. per cubic foot; the nine feet ſpar is at 71lb. per ſolid foot, and the 10 feet ſpar at 73.8lb. per ſolid foot, none of which are ſeaſoned wood. And yet it is not mentioned which of theſe were uſed. This may be adduced as a very good reaſon why the variations were ſo great. Center.

We ſhall now conſider the force in bruiſing materials, according as we may be directed by experiments made in this way. And 1ſt upon that of ſtone, which will in ſome meaſure lead to the preſſure in the ſame direction upon other materials.

The experiments ſelected from M. Gauthey, engineer, in erecting the bridge of Chalons ſur Saone, (tom iv. *Rozier Journal de Phyſique*, November 1774,) are now to be conſidered.

Experiments Selected.

	Length of the Stone.	Breadth.	Superficies.	Force.	Upon each ſquare line.	Proportion.	Differen
		Lines.		lb.			
Hard Stone	8	8	$64\frac{4}{9}$	46	$10\frac{2}{3}$	12	$\frac{2}{135}$
	8	12	$96\frac{2}{3}$	164	27	24	$\frac{1}{8}$
	8	16	$128\frac{7}{8}$	281	$35\frac{1}{3}$	36	$\frac{1}{54}$
Soft Stone	9	16	144.1	35	$3\frac{2}{3}$	4	$\frac{1}{110}$
	9	18	$162.1\frac{1}{8}$	53	5	$4\frac{1}{2}$	$\frac{1}{9}$
	18	18	$324.2\frac{1}{4}$	183	$8\frac{1}{2}$	9	$\frac{15}{18}$
	18	24	432.3	131	$12\frac{2}{3}$	12	$\frac{11}{48}$

In general, the force is greater as the ſurfaces increaſe, but a regular proportion to fix upon a theory is not found; but the laſt line in the table, the weight that cruſhes the 432.3 ſurface, muſt be greater than 131, the ſtone being of the ſame quality: if in the proportion of $8\frac{1}{2}$ to $12\frac{2}{3}$, the cruſhing weight will be 272.7 inſtead of 131.

The meaſures here taken are cubic, and the preſſing force is upon cubic lines, the thickneſs one line; where the preſſure is upon a ſquare foot, it is likewiſe to be underſtood one foot deep, or upon a cubic foot; the ſtone uſed, he terms *Givry ſtone*, of which he gives its abſolute force to be 870911, that it will bear 663552lb. In the cubic foot of ſoft ſtone the ſtrength is 248832lb. The proportional force of the hard and ſoft is $2\frac{1}{4}$ to 1.

A cubic foot of a ſtone fixed in a wall, and projecting one foot, was broken by a force of 55728lb. And a cubic foot of ſoft, by 10080lb. the proportion $5\frac{1}{2}$ to 1.

A cubic foot of hard ſtone, ſupported upon two fulcrums at 1 foot diſtance, was broken by 205632lb. ſuſpended from its middle; and the ſoft by 38592, the proportion about $5\frac{1}{4}$ to 1.

In fine, a cubic foot of the hard ſtone, was torn aſunder by 45,500lb.; and the ſoft by 15,850lb. the proportion $2\frac{3}{4}$ to 1. Thus far Gauthey's account.

It is to be obſerved, that the above table does not ſtrictly correſpond with itſelf; for the proportion upon the ſquare line, or $\frac{1}{144}$ of an inch, in place of $10\frac{2}{3}$ is upwards of 11. Now the increaſe of force which cruſhes 96 ſquare lines, and 128 one line thick, is 7.8oz. nearly upon the ſquare line, that is a little more than $\frac{1}{5}$ of 35 oz. upon the ſquare line; then as 128 ſquare lines is 4496 oz. ſo is 144 ſquare lines to 5058, to which add one fifth, viz. $1011\frac{3}{4}$, this makes $6069\frac{3}{4}$ upon the ſquare inch, and this multiplied by 144, the ſquare inches in a foot, is 874,022.4 oz. but Mr Gauthey ſays, that the ſquare foot of ſurface of one foot deep, is of the ſtrength of 870,911lb.

Again, there is 20,736 ſquare lines in a ſquare inch, the force upon a ſurface of 64 ſquare inches, being about 11.5 upon each ſquare line, is 238,464 oz. upon the ſquare foot. Upon the ſurface of 96 lines, 27 oz. to the ſquare line, gives 559,872 to the ſquare foot. Upon the ſurface of 128 lines, $35\frac{1}{3}$ to the ſquare line, is 878,806 to the ſquare foot, the proportion of 238,464 oz. to 870,911 is about $53\frac{1}{4}$ nearly, and of 559,872 to 870,911 is $\frac{2}{3}$ nearly; but by the experiment the number 870,911 is lbs. upon the ſquare foot, the other numbers are only ozs. The variation between the firſt difference, and between the preſſing force of $6069\frac{3}{4}$oz. upon the ſquare inch, makes in that proportion 874,022 oz. The increaſe of force from one ſquare inch, to one ſquare foot, muſt be $\frac{1}{18}$ part of what the above experiment upon the ſquare foot produces. Further experiments upon this therefore become neceſſary. In the mean time, we have no reaſon to doubt the experiment upon the ſquare foot, or upon the ſmaller parts, intermediate experiments only can make them accord. One example adduced is of conſequence. A pillar in the church of All Saints, in Angers, of 24 feet height, and 11 inches ſquare, ſupports a weight of 60,000lb. that is $\frac{1}{7}$ being added 85685.9 upon the ſquare foot, which is ſaid not to be $\frac{1}{7}$ part of the load that would cruſh it. From this it is evident, that the load it ſupports, exceeds the weight of an arch of 50 feet ſpan, of a ſemicircular form; the arch-ſtones being $2\frac{1}{2}$ feet long, or depth of the arch, and 2 feet in breadth. It is aſſerted under the article Bridge, that inſtead of an arch $\frac{1}{7}$ of the opening or 10 feet thick, that a pier of 2 feet thick would be ſufficient, but that it is given twice the length of the arch-ſtone, that is 5 feet thick in place

of

Center. of 10; but from this example, it is five times thicker than neceſſary, and has therefore ſuperabundant ſtrength, allowing even for the force of a current. How ſuperfluous then will theſe clumſy piers be reckoned, whoſe ſole effect is a uſeleſs obſtruction to the water! But as our principal deſign at preſent is upon the ſtrength of wood, in proſecution of this inquiry, we have paid particular attention to the ſtrength of this material, in the tranſverſe direction, in ſo far as it can be ſupported by experiment. Before we proceed to make particular application to its uſe, it will be neceſſary to conſider its ſtrength or power of reſiſtance in its breadth and thickneſs. In this it may be with ſafety averred that ſuch force as will bruiſe or cruſh its fibres, although only of $\frac{1}{100}$ or $\frac{1}{120}$ of an inch; the ſame weight continued, will produce the ſame effect upon the next ſtratum, till the whole piece is bruiſed, and its coheſive power overcome. This is ſupported by the experiments of celebrated mechanicians, as thoſe of Buffon, Muſchenbroek, Bouguer. Muſchenbroek, in his *Eſſai de Phyſique*, ſays, that a piece of ſound oak $\frac{27}{100}$ of an inch is torn aſunder by 1150lb; and that a plank 12 inches broad, and 1 thick, will juſt bear 189,168lbs. Theſe give for the coheſion of an inch, 15755, and 15763lbs. Bouguer in his *Traité de Navire* ſays, that it is very well known that a rod of ſound oak, of $\frac{1}{4}$ inch ſquare, can be torn aſunder by 1000lb. this gives 16,000 for the ſquare inch. Bouguer ſpeaks with certainty, that $\frac{1}{4}$ inch ſquare of ſound oak can be torn aſunder by 1000lb. If we reduce the above proportions of the experiment, it will appear, that the force will be much greater than 16000, to tear aſunder a piece of ſound oak of one inch ſquare. It muſt in the mean time be allowed, that Buffon's experiments being upon a larger ſcale, can be followed with more ſecurity than thoſe upon a ſmaller ſcale.

But after all, we have not yet got ſufficient data to form a criterion for an arch; nor can this be expected till we have more preciſely aſcertained the ſtrength of an arch above a right line, parallel to the horizon.

In the firſt place, as an arch is in form, one part of it towards the perpendicular, and the other towards a horizontal line; the force that it will ſuſtain, is between that force that a body will carry in the perpendicular, and that which produces a fracture upon any material in the horizontal direction. If the perpendicular is greater than the horizontal line, it will have more of the ſtrength of the bruiſing force, than of the tranſverſe fracture; and the force may be expreſſed by the ratio compounded of the bruiſing or cruſhing force, and that of the tranſverſe fracture; or not improperly expreſſed, as it has been denominated by others, the abſolute and relative force.

Unfortunately we have not yet a ſufficient variety of experiments to aſcertain the abſolute force, as thoſe made are only upon a ſmall ſcale; and the number is not adequate to form a proportion of the increaſe for the force that will cruſh a piece of wood of $\frac{1}{10}$, or as the French philoſophers have done moſt this way, we take their meaſure $\frac{1}{12}$ of an inch, or one line, and from that to an inch; but the force required is found to be greater than that of the ſquare of the diameter, as alſo the force to produce a tranſverſe fracture, or to give the relative ſtrength. This increaſes in a greater *ratio* than that of the ſquare of the diameters; for in Center. the above experiments, the weight that broke a batten 4 inches ſquare, was to that weight which broke an 8-inch ſquare batten, each of the length of 7 feet, more than double of the ſquare of 4 to the ſquare of 8 as above; we are, therefore, much limited as to an exact procedure.

At the ſame time, by keeping the experiments in view, and the obſervations made upon them, we ſhall be able to give ſuch a *ratio*, as to the neceſſary ſtrength, as will furniſh the ingenious artiſt with a pretty ſure principle to act upon, and prevent his uſing ſuperfluous materials, either in their application to horizontal right lines, or inclined in the right-lined direction, or in curves.

If we attend to the weight that cruſhes one inch of ſound oak, by Muſchenbroek's experiments, we find that it is 17,300lb. but, if computed from the increaſe, being as the ſquares of the diameters, it is only 16000lb. but it has been found as above, that the power to break, or make a tranſverſe fracture in the ſame wood, of the ſame length, of different diameters, if a conſiderable difference in diameters is taken, the difference of weight is twice that produced by the ſquare of the diameter. This compariſon makes the proportion between the ſtrength of ſtone, and that of wood, to be as 17,300 is to 6048, or 1 to $2\frac{1}{4}$ nearly. Thus we may with a ſufficient degree of accuracy ſubſtitute the one for the other in point of ſtrength, and form a proportion between the arch and the ſtrength of a horizontal line. As ſeveral experimentaliſts agree, that a ſquare inch of wood can be cruſhed or pulled aſunder with a weight of between 16,000 and 17,300lb. and that a piece of wood one inch ſquare, 18 inches in length, can be broken by 406lb. or at 12 inches by 609, or at 6 inches by 1218; attending to the addition as mentioned above, which has been proved by compariſon of experiments, to be upon the principle of the lever. If then, the geometrical mean is taken between the elevation of the arch, as preſſure or abſolute ſtrength, and the length of the horizontal line, this mean will be the ſtrength of the arch above the horizontal line; for it is evident, that ſo much as the piece of wood is elevated towards the perpendicular, ſo much the nearer it approaches to its abſolute ſtrength, and by ſo much as the arch is flatter or the piece of wood leſs inclined, the nearer it is to a ſtraight line, and ſo much the more reduced to its relative ſtrength; the poſition of the arch, therefore, muſt be in the ratio compounded of theſe two.

Having now eſtabliſhed the principles, let us endeavour to apply them to practice, in forming a centre or ſupporting an arch, to produce the intended curvature or mould for an arch, of any intended ſpan, and at the ſame time, have ſtrength to ſupport the ſame. Several ingenious artiſts, have not only formed, but have written and laid down principles for forming theſe moulds, both with regard to ſtrength and economy; at the ſame time we have not found any that have treated the ſubject upon principles that are fully eſtabliſhed. We have, therefore been the more particular, according to the principles laid down. 1ſt, We have aſſigned the weight to be ſupported, as eſtabliſhed by uncontroverted principles. And, 2dly, eſtabliſhed the ſtrength

of

Center. of wood as to its thickneſs or diameter, that is ſufficient to ſuſtain ſuch weight; which we have ſupported by the moſt approved experiments, comparing one with the other; and in the third place, we have conſidered the effects when the materials are applied in the horizontal direction, or elevated in any degree toward the perpendicular.

In a work of this kind, it is not only neceſſary to lay before our readers well grounded principles, and a well ſupported theory, but along with theſe, the different opinions, and various modes uſed by the moſt diſtinguiſhed artiſts, who have exhibited their plans to the public, together with the principles on which they were founded, and the ſucceſs they have met with, in anſwering the purpoſes propoſed.

Among the moſt diſtinguiſhed who have treated this ſubject, we may conſider Pitot a member of the Academy of Sciences, who wrote about the beginning of the laſt century. His method undoubtedly ſhows conſiderable ingenuity; but, at the ſame time, we muſt obſerve that he has been rather too profuſe in the quantity of materials which he has employed.

To lay his plan of operation before our readers, we ſhall give a figure ſhowing the conſtructions. The arch of the circle or ellipſe being formed; as little or no weight lies upon the center, till between 30 and 35 degrees of the arch, a ſtretcher is extended at this height, to the ſame height on the oppoſite ſide; two ſtruts ſupport this ſtretcher from the ſpring of the arch; upon the upper part of the ſtretcher, immediately above, or a little within the upper end of the truſs on each ſide, two ſpars joining upon the king-poſt, ſpring from about the middle of the arch, the ſtretcher being divided into four parts. Another ſtrut ſprings from the riſe of the arch, meeting the ſtretcher at this fourth part, from each ſide of the arch; theſe laſt ſtruts are joined by a tie-beam, which gives additional ſtrength to the firſt ſtretcher; upon theſe, on the upper ſide of the ſtretcher, two ſpars join the king-poſt, a little below the other; theſe ſpars are joined by bridles, or croſs ſpars, from the circular arch, to the lower ſtrut; ribs of the ſame formation being placed at proper diſtances, according to the width of the bridge, and joined by bridging joints, which may be of greater or leſſer ſtrength, according to the ſpan of the arch; and of conſequence the weight it has to ſupport. Pitot is the firſt writer who has given us any account of the method of forming frames, according to the above general deſcription. If no reſts are left at the ſpring of the arch, as a baſe for the center to reſt upon; let AB fig. 1. Plate CXXXVIII. be the ends of two planks raiſed from the foundation, upon which the center may reſt; let CD, be the ſtretcher, extended about 35 or 40 degrees from the ſpring of the arch; or, as little weight reſts upon the center till that height, the ſtretcher may be as high as 45 degrees; let AE, AG, BD, BG be the two ſtruts on each ſide; from each extremity of the center, let BE, AE, be fixed to the ſtretcher near C, and D, and AG, BG, at $\frac{1}{4}$ of CD; their ſtretcher or tie-beam GG, equal to one half of CD, the bridles, 1, 2, 3 &c. from A to C, and from B to D, are intended to prevent the arch from yielding; from A to C, and from B to D. The ſtruts EF, EF, meeting the king-poſt E, in F, and the interior ſtruts GH, GH, meeting the king-poſt in H, ſupport the bridles 4, 5, 6, on each ſide of the king-poſt; their uſe, is to ſtiffen the frame of the center, which ſupports the upper and more weighty part of the arch. Center.

The arch for which Pitot allots this center, is of 60 feet ſpan; and the arch ſtones ſeven feet in length, the weight of a ſolid cubic foot he makes 160lb. The Portland ſtone is admitted to weigh 160lb; but we do not find any other freeſtone of ſuch weight. It is however to be conſidered, that the Paris foot is 12.788 of our inches, that is, a little more than $12\frac{1}{4}$ths of our meaſure, which will make a difference of the weight upon the foot; as alſo their lb. is lighter than ours about 1.2 oz. by which the ſtone here mentioned is not better than ours. In a matter of this kind, ſuch exactneſs is not neceſſary. As was propoſed, we firſt conſider the weight to be ſupported by the frame, and here it is evident from the figure that no ſtrain lies upon the frame below C; the arch is raiſed, or can be raiſed to this height, before the frame is ſet; therefore the perpendicular C *c* determines the limits of the abſolute preſſure upon the frame. The triangle C *e c* preſſes on the frame, and the triangle C *f g* adds to the lateral preſſure; the weight of the arch, that actually preſſes upon the frame, is contained between the perpendicular lines C *c*, D *d*; no more can preſs upon the center frame. The part of the arch below C, will reſt upon the abutment, raiſed upon the pier; but if it is inſiſted that there is a preſſure upon the lower part of the center frame, what can only poſſibly reſt, or preſs upon it, muſt be contained between the parallels C *e* and *f g*; although it will be admitted, that the arch can be raiſed to the height C, without the center frame; but to indulge ſuch as ſay it is not adviſable to do it, we will admit what lies between theſe parallels to preſs upon the frame. Now to determine the weight of theſe parts of the arch, the diſtance between the perpendiculars C *c*, D *d* is 53 feet; the arch-ſtone is 7 feet, and admit it to be three feet broad, $53 \times 7 \times 3 \times 160\text{lb.} = 178{,}080\text{lb.}$

To determine the area between the two parallels C *c*, *f g*, the line *f g* perpendicular to the diameter AB, is $13\frac{1}{2}$, the baſe is $9\frac{1}{2}$, and C *f* perpendicular to it is 7 feet, the area is $33\frac{1}{4}$ feet; C *c* the baſe of the triangle C *f c* is 7.2, and *f c* is 7; the area is 25, the difference is $8\frac{1}{4}$. If this difference had been the exceſs of the triangle C *f c* above the triangle C *f g*, it would have been a preſſure upon the frame; but as it is the reverſe, the preſſure is upon the abutment. This diſtinction is requiſite to be taken notice of, that an unneceſſary expence of wood and workmanſhip be not expended, where it is unneceſſary; as well as its being unworkman-like, or having an appearance of ignorance in the engineer.

Let us now inquire, what ſtrength of materials is ſufficient to ſupport this weight. It has been laid down as a principle, that the parts of wood in an arch act upon one another by their abſolute ſtrength; but are liable to the tranſverſe fracture; in proportion to the length of the piece, in a ſpan of 60 feet, the length of the piece may be 7 feet without ſenſibly impairing its ſtrength, in reducing it to the round; and experiment gives the relative ſtrength of 7 feet to be 47649lb. by 8 inches ſquare. It has been formerly illuſtrated

from

Center. from experiments, that the ſtrength is according to the depth, with this precaution, that the breadth or thickneſs be ſuch, that it is prevented from warping, the abſolute ſtrength being nearly, by laſt experiment mentioned, as the ſquares of the depth. The abſolute ſtrength to the relative force, has been found nearly 60 to 1, although by ſome it is ſaid to be only 42 to 1; the abſolute ſtrength of the plank 12 inches broad by one thick, is 189163lb.; if two inches, it would be no more than 189163lb. If it had been 8 inches ſquare, then every 7 feet of the arch might be broken with the weight 189163lb.; but the whole weight of the arch is only 178080lb. that is 11080 leſs weight than what that part of the frame would bear; but 7 feet is only about one-ſeventh part of 53; the frame is therefore of ſufficient ſtrength to ſupport the whole weight of the arch when equally divided along its whole length. This is not the caſe with the centre frame of an arch, as it is loaded at one place, and not at another; it is therefore apt to yield between the parts where the load is laid; that is, it may riſe in the middle, and thus change the form of the arch; for the center frame is not only intended to ſupport the arch, but likewiſe to preſerve its true form; for this cauſe ſome ſtruts may be neceſſary to prevent its putting the arch out of ſhape. To remedy this, where the arch begins to preſs upon the frame at C, draw the chord line C *c*, fig. 2. which acts as a tie-beam to the arch, from C at 35 degrees to *c* at 51 degrees, as beyond this, if the arch frame had been permitted to alter its ſhape, it would begin to be reſtored to it, at leaſt the force would tend that way. At that part of the arch, where its weight begins to flatten the frame, as at 2, draw the ſtretcher 2, 2, which likewiſe acts as a tie-beam, and gives ſupport to the bridle 1, on one ſide, and to 3 the bridle upon the other ſide, from D *d*; and thus the arch *c d* is prevented from ſinking by the tie-beam *e d*. This will effectually prevent any warping or yielding of the frame, notwithſtanding the enormous load from the ſize of the arch ſtones.

But it is neceſſary to attend to the relative ſtrength of different kinds of timber of which frames may be conſtructed. The relative proportion of the ſtrength of oak and fir has been aſcertained by different experiments; and although the reſults do not exactly agree, yet the mean or leaſt proportion may be taken. Let us take $\frac{6}{10}$, that of Buffon. Now to reduce a frame of oak to one of fir of equal ſtrength, divide 8 inches, the diameter of the oak, by $\frac{6}{10}$, the relative ſtrength of fir, this gives $1\frac{1}{3}$ inches. Allow $1\frac{1}{2}$ inches. The depth of the frame will then be $9\frac{1}{2}$ inches by $\frac{1}{3}$ or $\frac{1}{2}$ inches in breadth; that is, $9\frac{1}{2}$ by $2\frac{1}{2}$ inches. In this way the ſtrength of the fir arch is rendered equal, and by the additional allowance ſuperior to the oak in ſtrength, and of leſs expence in wood and workmanſhip.

We have here taken the moſt ſimple method of inveſtigation and computation, that every mechanic, whether ſcientific or not, can eaſily follow it in every ſtep, and judge of the propriety or impropriety of what is advanced.

It will now be neceſſary to follow Mr Pitot in eſtimating the quantity of materials which he allows. The ring of his arches conſiſts of pieces of oak 12 inches broad and ſix thick. The ſtretcher CD is 12 inches ſquare, the ſtraining piece GG is likewiſe 12 inches ſquare, the lower ſtruts 10 inches by 8; the king-poſt 12 inches ſquare, the upper ſtruts 10 by 6, the ridges 20 by 8, French meaſure. Pitot allows the ſquare inch to carry 8650lb. that is, one half of the abſolute ſtrength, which is aſcertained by experiment to be 17300lb. nearly, and not by the ſquare of the diameter, which would be only 16000lb. But on account of knots he reduces it to 7200lb. per inch. He then computes the whole load upon the frame to be 707520lb. which is the weight of the whole arch-ſtones, ſuppoſing each to be 3 feet broad, and the whole to preſs upon the frame. This comes ſo very near, that it would be needleſs to diſpute about the difference. We have ſhown that no more than 178080lb. preſſes upon the frame; but we are not ſo fully ſatisfied as to the weight that reſts upon the center. Pitot ſuppoſes it to be $\frac{1}{14}$ths of the whole weight; but he has aſſigned no reaſon for this conjecture. Mr Couplet aſſumes that it preſſes by $\frac{4}{9}$ths. Another writer who makes ſome comment upon the whole, ſays that $\frac{1}{14}$ths is nearer the truth than $\frac{4}{9}$ths, but gives no reaſon for his opinion, which ſeems to be equally vague as the other. The preſſure here allowed, and the reaſon of aſſigning ſuch a preſſure, have been already explained. Our readers, therefore, have it in their power to examine the principles, and decide for themſelves. Center.

It has been aſſerted by ſome, that the arch does not preſs upon the center frame below C. At the ſame time, were we inclined to diſpute this opinion, we might ſtate our objection in the following manner: Suppoſe the area of the triangle C *c f* was equal to the area of the triangle C *f g*, ſo that the friction above would make the triangle C *c f* reſt upon the ſide *c f*; and as the triangle C *f g* is greater than C *c f* in the proportion of $33\frac{1}{3}$ths to $25\frac{1}{3}$d, the coheſion of the parts will determine the intermediate ſpace between C *c* and *g f*, to reſt upon the abutment as has been ſaid, and not on the perpendicular, unleſs a ſciſſure is made in the direction *g f*, in which caſe it would be detached from the lateral preſſure, and ſo reſt upon the center. As this is not the caſe, any plea for a preſſure below C is entirely removed; and a method to determine with preciſion the actual preſſure upon the center frame is ſhewn. If the arch is the center of a circle, or an ellipſe, a frame ſo much ſtronger is neceſſary, as more of the arch preſſes upon the frame; but the method of determining the ſtrength is the ſame as here laid down. A ſecond figure of the ellipſe, and another calculation are required. It is here to be underſtood, that the frame calculated for is only one rib; and the weight it ſupports is that of the arch ſtones, between the parallels C *c*, D *d*, to three feet in breadth. If, therefore, the bridge is 42 feet broad, it requires 14 ribs of the above ſtrength. Theſe are joiſted over with planks, ſuppoſe of two inches thick, and upon theſe the arch-ſtones are laid, equally carried on from C and D, and riſing equally on each ſide, till the key-ſtone is ſet, in which ſtate they remain, till the engineer judges it proper to ſlacken the frame, by ſtriking out the wedges at the reſts, A and B, (or as the French uſe logs between the frame and arch), ſo far as to allow the arch-ſtones to preſs upon one another, by the equilibrated

Center. curvature of the arch; after which, it being found that the arch is perfectly juſt and ſecure, the frame is entirely removed. In the frame, fig. 2. the tie-beams are not taken into the account for ſtrength, the arch being abundantly ſtrong without them. Their uſe is merely to ſtiffen the frame, on account of the manner in which the weight is laid on. In an elliptic arch, it has been mentioned that it is ſomewhat different, requiring more ſtrength and the binding likewiſe different. In what are termed elliptic arches, few or none are ſtrictly ſo, the true elliptic curve being difficult to form on ſo large a ſcale. It may therefore be acceptable to our readers, and alſo to the ingenious mechanic, if we give the form of an ellipſe that will anſwer nearly to the elliptic equation, and upon an univerſal plan, eaſy of conſtruction. The greater and leſſer axes of the ellipſe being given, divide the exceſs of the greater axis above the leſſer into three equal parts; ſet off two of theſe from the center of the greater axis each way; upon this diſtance deſcribe an equilateral triangle on each ſide of the greater axis, and produce the ſides of the triangle both ways from the vertex of theſe triangles, to the extremity of the leſſer axis; deſcribe two arches, till terminated by the ſides of the triangle produced gives the flat part of the ellipſe. At the interſection of the produced ſides of the triangle, as a center with the diſtance of the extremity of the greater axis, deſcribe an arch which will meet the other arch and complete the ellipſe. Let AB, fig. 3. be the greater axis 60, and DE the the leſſer axis 40, be drawn at right angles, biſecting one another in C. Set off AF 40, upon AB, then the exceſs FB is 20, which divide into three parts; ſet off two of theſe from C to G and H; upon GH deſcribe the equilateral triangles GHK, GHL; produce KG, KH, to any indefinite length, which may be cut by the arch drawn through D and E, from the centers KL at the interſections GH, and diſtance AB, let the other part of the ellipſe be deſcribed, thus an univerſal method of deſcribing a beautiful ellipſe, and ſo juſt that it anſwers the elliptic equation exceedingly near, at leaſt till it becomes very flat.

A ſecond form of a center frame deſcribed by Pitot, is adapted to an elliptical arch. The conſtruction differs nothing from the former, only the two upper ſtruts are parallel; the ſtrength as in the former is ſuperabundant, which is eaſily accounted for, from not knowing the real weight that lies upon the frame, or by conſidering the whole weight of the arch to reſt upon the frame. Both this and the former, Pitot has conſidered as diviſible into three pieces, which renders it more manageable in erecting, particularly in large ſpans. See fig. 4.

Fontana has given a deſcription of a very neat frame conſiſting of two pieces, the upper and the lower. The ſtruts 1 2, 1 2 taken from Fig. 4. leave a repreſentation of Fortana's frame. Different conſtructions being laid before our readers, the ingenious artiſt may improve the hints that have been thrown out; and thus form a more ſimple, or better conſtruction.

We ſhall now ſelect draughts of the moſt approved center frames that we are able to collect; and make ſuch remarks upon them as may occur. Fig. 5. exhibits a form, which the experienced engineer will readily allow to be neat and ingenious; but there is much more wood and work expended than is neceſſary. Center. It is divided into two parts, the baſe or ſtretcher LL, of the upper part, reſting upon the lower part of the frame, the greateſt part of which at leaſt, muſt appear quite ſuperfluous. The lower reſts, EF, appear only neceſſary to prevent the ſtretcher LL from yielding, and thereby allowing the arch to loſe its true curvature.

The general maxim of conſtruction adopted by Perronet, a celebrated French architect, is to make the truſs conſiſt of ſeveral courſes of ſeparate truſſes, independent, as he ſuppoſes, of each other, and thus to employ the united ſupport of them all. Each truſs ſpans over the whole diſtance of the piers. It conſiſts of a number of ſtruts, ſet end to end, ſo as to form a polygon. By this conſtruction, the angles of the ultimate truſs, lie in lines pointing towards the center of the curve. It is the invention of Perrault, a phyſician and architect, and was practiſed by Manſard de Sagonne at the great bridge of Moulins.

In the centering of the bridge of Cravant, fig. 6. the arches are elliptic. The longer axis or ſpan is 60 feet, the ſemitranſverſe axis or riſe 20 feet. The arch-ſtones weigh 176lb. per foot, and are four feet in length, which is the thickneſs of the arch. The truſs beams were from 15 to 18 feet long, and 9 inches deep by 8 broad. The whole frame was conſtructed of oak. The diſtance between the truſſes, which were five in number, $5\frac{1}{2}$ feet. The whole weight of the arch amounted to 1350,000lb. which is nearly equal to 600 tons, making 112 tons for the weight on each truſs. Ninety tons of this muſt be allowed really to preſs the truſs; but a great part of the preſſure is ſuſtained by the four beams which make the feet of the truſs, joined in pairs on each ſide. The diagonal of the parallelogram of forces drawn for theſe beams is to one of the ſides as 360 to 285. Then 360:285::90:$17\frac{1}{2}$ tons the weight on each foot. The ſection of each is 144 inches. Three tons may be laid with perfect ſafety on every inch; and the amount of this is 432 tons, which is ſix times more than the real preſſure on the foot-beams in their longitudinal direction. The abſolute ſtrength of each foot-beam is equal to 216 tons. But being more advantageouſly placed, the diagonal of the parallelogram of forces which correſponds to its poſition is to the ſide as 438 to 285. This is equal to $58\frac{6}{10}$ tons for the ſtrain on each foot; which is not much above one-fourth of the preſſure it is able to bear. This kind of centering, therefore, undoubtedly poſſeſſes the advantage of ſuperabundant ſtrength. The upper row of ſtruts is quite ſufficient; nothing is wanted but to procure ſtiffneſs for it.

In his executing the bridge at Neuilly, fig. 7. of 120 feet ſpan, and only 30 feet riſe; the arch 5 feet thick; his ſtrut-beams are 17 by 14 inches of ſize, and king-poſt 15 by nine, the ſtrut-beams placed in three parallel polygons, each abutting upon the king-poſt, he uſes the binders or bridges of 9 inches ſquare. This arch is remarkable for its flatneſs. The account Perronet gives of his ſucceſs with this frame, and the effects it produced in his work, are as follows. Notwithſtanding the different improvements he had made upon his center frame, he here found that it ſunk 13 inches, before the

Center. the key-ſtones were ſet, and that the crown roſe and ſunk as the different courſes were laid. At 20 courſes on each ſide, with a load of 16 tons upon the crown, it ſunk an inch; when 20 more courſes were laid, it ſunk half an inch more, and continued ſinking as the work advanced. When the keyſtone was ſet, it had ſunk 13 inches; and, as it ſunk at the crown, and in the advance to the crown, it roſe at the haunches, ſo as to open the upper parts of the joints almoſt an inch; which gradually leſſened towards the crown, and of conſequence the joints in the lower part opened as the upper part was compreſſed. This no doubt ſhowed a ſuppleneſs in the frame, and at the ſame time inattention in the architect, to load the crown when he perceived it ſinking, with having already too much weight upon it. If he had obſerved the crown to riſe, it would then have been proper to give it additional weight.

Let us now attend to the deſcription of the center frame of the bridge of Orleans, fig. 8. The architect to this bridge was Hupeau; and it is univerſally allowed to be an elegant ſtructure. The arch ſtones are ſix feet in length, the form is elliptical, the ſpan 100 feet, and riſe 30. Hupeau died before any of the arches were complete. The center-frame had been placed, and ſome rows of the ar . laid. Upon his demiſe, Perronet ſucceeded as architect, and finiſhed the bridge. As the work advanced, he found that the crown of the center roſe; he then found it ſink as remarkably, which ſhowed that there was ſome defect: he inſerted the long beam AB, on each ſide; he then found the frame ſufficiently ſtiff; for this made a change in the nature of the ſtrut.

Having taken a view of the practice of the French architects, as to their form and effects, let us direct our attention to thoſe of our own country, which are well worthy of notice. We ſhall only name ſome that have uſed truſſings, and among theſe we find the center-frame of Blackfriars bridge, fig. 9. The ſpan here is 100 feet; the form is elliptical, the arch-ſtones from the haunches ſeven feet, near the key-ſtone not quite ſo much, as they decreaſe in length from the haunch to the key-ſtone.

A particular deſcription of this arch is not neceſſary; a view of the figure will ſhow the uſe of the different parts; it may be ſufficient to obſerve, that when the arch ſtone was placed, it had changed its ſhape only one inch, and when the frame was taken out, the arch remained firm without any ſinking of of conſequence. The great arch did not ſink above one inch, and none of them above an inch and a half; whereas thoſe already mentioned, ſunk by the ſuppleneſs of the frame 13 inches, and ſome of them 9 inches more when the frame was removed.

Different methods are employed for eaſing the frame, or diſengaging it from its weight. We ſhall give a ſhort deſcription of Mr Mylne's method of placing and diſengaging his centre frame from the maſon work. Each end of the truſs was mortiſed into a plank of oak cut in the lower part as in the figure; a ſimilar piece of oak was placed to receive the upper part of the poſts. The blocks reſted upon theſe poſts, but were not mortiſed into them, pieces of wood being interpoſed. The upper part of this block was cut ſimilar to the lower part of the other; the wedge E, being intended to be driven betwixt them, was notched as in the figure, and filled up with ſmall pieces of wood, to prevent the wedge from ſliding back by the weight of the arch; which, it will appear from the figure, would have been the caſe: the event proved the fact. When the centre was to be ſtruck, the inſerted pieces of wood were taken out, and the wedge which was prepared for driving back, by being girt with a ferril round the top, was removed by a piece of iron driven in with the head ſo broad as to cover the whole of the wood. A plank of wood was prepared armed with iron in the ſame manner at the one end, and ſuſpended ſo that it could freely act in driving back the wedge to any diſtance, however ſmall, with certainty. Thus, by an equal gradation, the centre was eaſed from the arch, which appeared to have been ſo equally ſupported throughout the whole of the operation, and the arch ſtones ſo properly laid, that it did not ſink above one inch; and thus it was evident that the center might be entirely removed, having completely anſwered the purpoſe. Center.

The above examples may be conſidered as ſufficient to ſhow the effects of the truſſed arches, which have been employed by the French architects. We ſhall now take the liberty of ſuggeſting ſome hints which may tend to improve the conſtruction, and remedy the faults and failures that have occurred in practice.

Truſſed arches for center frames being found expedient in navigable rivers, and almoſt in every river which is apt to be raiſed by rains, or other riſe in the river, the frame is apt to be endangered or carried off, to the great riſk of bringing down the arch, and ruining the work before it is finiſhed. In arches where there is no ſuch danger, the frame may be properly ſecured by poſts from below, which are made to abutt upon theſe parts of the arch, where the greateſt ſtrain muſt fall.

In the center uſed by Pitot we have only to complain of an unneceſſary expenditure of wood and workmanſhip. We have already ſhown what ſtrength of oak is neceſſary, and have reduced that ſtrength of oak to an equal ſtrength of fir wood for the ring of his frame, which alone ought to have the ſtrength required to be fully adequate to the load; but as this weight muſt be gradually applied, the frame muſt likewiſe have ſuch a degree of firmneſs as to form the exact mould of the arch that is intended, And, for this purpoſe, it muſt be prevented from yielding in any part of its arch. Now, as it has been made to appear, that the frame ſupports no part of the arch till it riſe from the ſpring to about 35 degrees, if a ſemicircle, and ſo in proportion for a ſegment of a circle; in an ellipſe, to a part ſimilar according to the nature of that curve; the ſupporting ſtruts and ties can be more particularly directed to ſupport that part of the arch which produces the greater ſtrain upon the center. In fig. 2. where the neceſſary ſtrength for Pitot's arch is pointed out, the frame of fir requiſite to ſtiffen the frame, is $9\frac{1}{2}$ by $2\frac{1}{2}$. The tie-beam Cc is joined to thoſe parts of the arch, where the ſtrain being greateſt, would tend moſt to raiſe it in the crown. The ſtrength of this tie-beam being $9\frac{1}{2}$ by $2\frac{1}{2}$, and its length 25 feet, would require a weight of 30495 lb. to make the tranſ-

Center. verſe fracture, one-third of this at the bridle 1, 3, is ſufficient to reſiſt the ſtrain at that part of the arch: and the abutment, being according to the principles laid down under the article BRIDGE, prevents the poſſibility of its riſing at the haunches; but if not formed according to their principles, the two tie-beams *C c D d* are joined by a third tie-beam 2, 2 with its bridle 3, 4. Fig. 4. is Pitot's centering for his elliptic arch: the ſtrength of fig. 2. may ſuffice to this by giving the ring and tie-beams $\frac{1}{4}$ an inch more depth.

Fig. 6. repreſents two centerings uſed by Perronet; A is that uſed by him in erecting the bridge at Nogent, and B that at Maxence; they differ little from one another. That at Nogent is 90 feet by 28 of height. The ſpan of the latter being greater, we ſhall here conſider the weight to be ſupported. This is the arch from A to C, which is an arch of 47° 45′. The meaſurement is 42 feet; the arch-ſtones $4\frac{1}{2}$, and ſuppoſing them 3 feet broad, they would amount to 567.9 ſolid feet, which, at 160lb. per foot, is equal to 90866.88lb. This is little more than one half of the ſemicircular arch; and, although it is flatter, the weight is ſo much leſs, that no additional ſtrength is neceſſary to be given to the frame, fig. 2. for the 60 feet ſpan. There is likewiſe abundance of ſtrength of materials for the 90 feet arch; but on the greater extent, that it may be rendered more ſtiff, a tie-beam 1, 4, 3, 4 may be added on each ſide of the arch, as repreſented by the dotted line.

It is ſcarcely neceſſary to make any farther calculations on the centering uſed by Perronet. It appears, that notwithſtanding the ſuperabundance of wood employed, they were ſo ſupple as when uſed upon an extended arch, they roſe and ſunk ſo much, that the arch was changed from its intended form by a radius of ſeveral feet. Theſe changes took place in erecting the bridges at Nogent and Maxence, which are repreſented in fig. 6. Perronet, it would appear, was not ſatisfied with theſe; and, convinced of their inſufficiency, changed the form of the frame of the bridge at Neuilly. But this form is far from anſwering the purpoſe; for, when the arch-ſtones began to preſs upon the centering, it yielded to the weight. He then loaded the crown to prevent its riſing there, but it ſtill ſunk; he added more weight to the crown, it continued ſinking as the work advanced. When the key-ſtone was ſet, it had ſunk more than 13 inches, and it was found to have raiſed the haunches; for when the centering was ſlackened, the arch ſtill ſunk for about 9 inches more. The arch-ſtones being raiſed at the haunches, the joints were of neceſſity opened; for the preſſure from the crown, when the centering was removed, forced them again into contact, by which the arch flattened to ſuch a degree, that from an arch intended to have a radius of 150 feet, it flattened till part of it was, as if formed from a radius of 244 feet. It here appeared to be ſettled, from which a conſiderable deformity muſt appear in the ſtructure; which deformity took its riſe from two evident cauſes: The want of firmneſs in the centering, and the bridge not properly loaded at the haunches It is evident, that if the load at the haunches is only equal to the weight of the arch-ſtones from the place where they begin to reſt on the centering to the crown of the arch, the preſſure of the arch could never overcome itſelf or its equal weight upon the haunches; Center. much more, if the weight upon the haunches, before it comes to preſs upon the centering, was made to exceed that part of the arch that did preſs upon it, the load upon the crown of the arch would have reſtored the figure of the centering. It ſeems to be a ſtrange overſight, that Perronet, when he ſaw that his centering was riſing at the haunches, did not apply his loading to this part of the arch, by which he might have reſtored it to its equilibrium before his center was ſtruck, and before his lime had loſt the band; if this is once done, it is allowed, that it does not again recover it.

From the whole of this it appears evident, that filling up the haunches to a proper height, ſo as to make a firm abutment to the preſſing part of the arch, ſerves two good purpoſes. It acts as an abutment to the center frame, in preventing its ſinking by the load as the work advances; and likewiſe prevents the arch-ſtones at the haunches being raiſed from their beds; for it is only acted upon by a force conſiderably leſs than what they have a power to reſiſt. Having now ſeen the defects of this centering, and animadverted on the manner of executing the work, let us now examine the weight of this arch, and what reſiſtance would have prevented its change in ſhape, and preſerved its intended form.

The part of the arch that preſſes upon the center, is from C to C, fig. 10. an arch of 36 degrees, and meaſures $94\frac{1}{4}$ feet nearly; the ſtones 5 feet in length, and breadth 3, make 1979.035 ſolid feet, ×160lb. the weight of a ſolid foot, make the whole weight 316645.88lb. Allow each beam of the truſs to be 7 feet, and its abſolute ſtrength, to tear it at 12 inches deep, by one inch thick, 189163; the abſolute power of tranſverſe fracture, 95416lb. The ſtrength of the arch is the mean of theſe, or ratio compounded, taking one-third of each, the geometrical mean is 44285lb. that each 7 foot can ſuſtain when formed into an arch; there are 13 times 7 in 94 feet, equal to a power of 582764, to ſuſtain the weight of 316645.68 if equally diſtributed. But this not being the caſe, a tie-beam of about 30 feet marked *c c*, *d d*, will prevent the arch yielding to the preſſure. It is ſupported at *e* by the ſtruts *E e*, *b b*; and theſe by the joint ſupport of *e f*, *b f* tied at *k*. The whole center frame is ſupported by the upright poſts CC, DD. Two wedges A and B are placed acroſs between two blocks, which are fitted for a reſt to the frame. When it is required to be ſlackened, and the frame withdrawn from the arch, they allow it to reſt by its own preſſure. This it muſt appear obvious, ought to be done when the key-ſtone is ſet before the lime has begun to be dry and ſolid.

The center frame of the bridge of Orleans is repreſented fig. 8. It has been already noticed in this undertaking, that Perronet ſucceeded Hupeau. As the work advanced, he found the arch and frame to ſink, and trying his ordinary mode of loading the crown of the arch, he was now taught by experience to ſtrengthen his center frame, and happily ſucceeded by continuing his ſtrut. By forming the baſe of the triangle 1, 2, 3, on each ſide, his frame was rendered ſufficiently ſtiff, and the inner part below AB, AB became ſuperfluous. The weight that preſſes upon this frame is great, both

on

Center. on account of the flatneſs of the arch, and the length of the arch-ſtone. The preſſing arch is an arch of 57 degrees; it meaſures 88.87 feet, × 6 the length of the arch-ſtone, and by 3 in width, makes 1599.66 ſolid feet × 160lb. the weight of a ſolid foot, gives 255945.6lb. The length of each plank of the truſs being 7 feet, depth 12 inches by 2 inches thick, the ſtrength is 189163lb. The weight for every 7 feet in length of the arch, one-third of this 63054⅓lb. in 88 feet, there is 12 times 7, that is 63054.3 × 12=756,652lb. to ſupport 255945.6lb. more than 3 times ſtronger, without taking into account the ſtrength of the arch, being the mean of the ſplitting force and tranſverſe ſection: the tie-beams, as in fig. 7. will be of abundant ſtrength to ſtiffen the frame.

The next we take notice of is, the truſs frame, fig. 9. uſed by Mr Mylne, at Blackfriars bridge, London. this is ſupported by ties and ſtruts in ſuch a manner, that no ſinking took place during the maſon work going on, although the arch-ſtones at the haunches were 7 feet, gradually leſſening to the crown of the arch; and, when the frame was ſtruck, which was done by a very ingenious method, by the wedges of the conſtructions as in the figure, in place of ſinking 9 inches, it did not ſink above 1, which may well be accounted for by the compreſſion of the mortar; whether a ſmaller quantity of materials might not have anſwered the ſame purpoſe, ſuch as fig. 7. we ſhall refer to the judicious reader, or to the ingenious artiſt who may have occaſion to depend upon ſuch frames for ſupport of this work, or a tie-beam between 1 and 3 on each ſide, repreſented by the dotted line. As there is a ſtrain upon the frame at *s*, *s*, let theſe tie-beams be ſupported by the ſtruts *a* 3, *b* 3 on each ſide, and tied at 4, 4 as repreſented by the dotted line 4, 4. It does not appear that what lies between the dotted line *a* 4, 4 *b* bears any part in the ſupport or ſtiffneſs of the frame, and therefore becomes unneceſſary; nor does it appear, that the different beams uſed as king-poſts are of ſo much advantage for ſtrengthening the frame, as tie-beams would be. At the ſame time, thoſe uſed by Mr Mylne are employed with ſo much judgement, that none of their effects are miſapplied. This cannot be ſaid of any of the frames uſed by the French architects, even of that uſed at the bridge of Orleans. They are not often employed by the Britiſh architects; they rather prefer a tie-beam at the ſpring of the arch from one ſide to the other. This, however, might be as judiciouſly applied at the height where the arch begins to reſt upon the frame, eſpecially if the ſhoulders are properly loaded or filled up, ſo as to be a counterpoiſe to the arch-ſtones, that reſt upon the frame. In this caſe they effectually prevent the neceſſity of a tie-beam, as a diameter at the ſpring of the arch; and from the ſpring proper ſupports may be given at the upper tie-beam, and from it to any part of the arch, where the greateſt ſtrain lies.

Having from the examples adduced, and the obſervations made upon them, found center-frames of ſufficient ſtrength to ſupport arches of very extenſive ſpans, and even greater extent than they have yet been applied; it may be ſaid, why not continue theſe frames for the bridge, without the very great additional expence of throwing a ſtone arch over them? The maſon would anſwer, that the ſtone was more durable, Center. and had other advantages, particularly as to neatneſs, when once thrown, and freed from the uncouth truſſes and tie-beams neceſſary in the wooden frame. The carpenter would reply, that if wood was not ſo durable as ſtone, it could be raiſed at much leſs expence; and, when it failed in any part, it could be replaced at a ſmall expence, and made to laſt longer than a ſtone arch; which latter, when it fails, requires as much expence as at firſt, and even more, in clearing off the rubbiſh of its decayed and now uſeleſs materials. As to neatneſs, the frame of wood vies with the arch of ſtone in elegance, and is erected at half the expence, and even leſs. But now ſince iron materials are introduced in place of ſtone, there is room for experiments with regard to neatneſs and extent of ſpan.

We ſhall here ſuppoſe the carpenter exhibits this plan. Let AB be a ſpan of 60 feet, (fig. 11.) the arch a ſemicircle, the abſolute ſtrength of oak a plank 12 inches by 1 is 189163 lb. Let the arch be compoſed of pieces 5 feet long, 12 inches deep, and 2 inches broad; a ſecond arch joining to this, of the ſame depth and breadth in cloſe contact, but the joints of the one to the middle of the other, like brick-building, or as the carpenter's expreſs it breaking-joint. The abſolute ſtrength of this arch is, before the two truſſes are joined, more than 84 ton, as may be collected from the calculations above, which is more than 3 times what can ever come upon it. The beauty of this arch would be hurt by placing ſtruts below to ſtiffen it, for which there is not the ſmalleſt occaſion; for it can be ſtiffened to better advantage above the arch. But this is not practicable in center-frames. Let the road-way be CDEF, reſting upon the perpendicular ſupport 1, 2, 3, &c. As the carriage acts upon theſe in the oblique direction, tranſepts from the arch in a radial direction, give them the advantage of equal preſſure upon the arch. Each of theſe perpendiculars is mortiſed into ſhort pieces, that will form into an arch, the pieces all abutting one upon another, and forming a fillet over the arch, and projecting ſo far, that the faces of an architrave, of any order may be formed along the face of the arch, which adds both to its ſtrength and beauty. Thus there is formed a rib, 12 inches deep and 4 thick, with its fillet over it 4 inches deep and ſix inches broad, to cover the faces of the architrave. Suppoſe the arch 44 feet wide, 7 of theſe ribs may give a ſtrength not inferior to the ſtrength of ſtone or any metal; but it will be ſaid, it will not be ſo durable. It is well known how long wood laſts in the roofs, and joiſts of flooring, and even when it forms a part of the wall of a houſe built of brick. The interſtices between theſe perpendicular bearings of the wood may be built up with brick; even brick on edge, or brick thick, will render its preſervation equal to what it is in a houſe, and will preſerve it from the bad effects of wet and dry; and the lower part of the ribs covered with a thin lining. A door being left in the ſide to obſerve at different times any failure in the wood, it may be repaired without interrupting the paſſage by the bridge. It ought to be ſo covered above, that water may be prevented from going through to the injury of the bridge. It has been formerly mentioned, in ſpeaking

Center. ing of the proportional ſtrength of oak and fir, and by the calculation it appeared, that fir plank $13\frac{1}{2}$ inches, is equal in ſtrength to oak of 12 inches. And thus a framing of wood does not much exceed the expence of centering either a ſtone or iron bridge; and is not inferior even in elegance.

The ſpan here propoſed, is only 60 feet. But an arch of 600 feet may be required, which muſt have a centering to ſupport the weight and preſerve the figure; the ſize of that center frame can be made of ſtrength equal and even to exceed the weight it has to ſupport. It can be rendered ſtiff by the method propoſed for the 60 feet arch. This, therefore, will be a bridge that will ſupport any weight that can be laid upon it, and may be of any figure, elliptical, or at the pleaſure of the architect, any other curve which may be required. It may be framed in a ſimilar manner to thoſe formed of iron, but it is natural to ſuppoſe that one arch over the other will be equally ſtrong and more eaſily preſerved from the weather, conſtructed in the way deſcribed above.

In the ſimple wooden bridges not curved, it is only neceſſary to refer to fig. 7. where the ſtruts E *c*, *f*, *h g*, will be a ſupport for planks, that will form a ſtraight bridge, joining ſo many ribs as are neceſſary for the bridge according to its breadth.

The joints may be ſecured from opening by dove-tailed pieces being inſerted acroſs the joints on the inſide of the rib; the abutments prevent the ends of the arch from flying out. The preſſure above coming upon it obliquely, may be ſaid to tend to make it riſe at the crown, eſpecially when of a great ſpan. In the center-frame, the only manner of preventing this is by ſtruts and tie-beams judiciouſly applied. Here the riſe may be prevented more effectually without hurting the ornamental part of the arch. In the abutment, which muſt be of maſon-work, let a beam be built into the wall, the ends at G and K projecting 1 foot, correſponding to each rib, the road-way formed by the beam DE, let a tie-beam GD, KE, join theſe in the manner the carpenter knows to be the moſt ſecure; from this tie-beam, let the radial ſtruts be mortiſed into the fillets at G, K, formerly deſcribed, inſtead of the perpendiculars there named, and perpendiculars joining the roadway CDEF, and reſting on the tie-beam GD, KE, ſupported by the radial ſtruts 4, 5, 6, as in the figure. Thus the crown of the arch cannot riſe without lifting up the whole body of the abutment at each end, and it cannot ſink till the weight laid upon it is ſufficient to cruſh the materials of which the arch is compoſed. In this manner a neat and elegant arch is procured, that may at a ſmall comparative expence be kept up for centuries. Here is then a choice of three ſpecies of arches, that may vie with each other in point of ſtrength. With the laſt none may compare in point of elegance, and in duration, perhaps not inferior to the iron bridge.

Center of Gravity, in *Mechanics*, that point about which all the parts of a body do in any ſituation exactly balance each other.

Center of Motion, that point which remains at reſt, while all the other parts of a body move about it.

Center of a Sphere, a point in the middle, from which all lines drawn to the ſurface are equal.

Hermes Triſmegiſtus defines God an intellectual ſphere, whoſe center is everywhere, and circumference nowhere.

Centeſima ‖ Centlivre.

CENTESIMA USURA, that wherein the intereſt in a hundred months became equal to the principal, i. e. where the money is laid out at one per cent. per month; anſwering to what in our ſtyle would be called 12 per cent. for the Romans reckoned their intereſt not by the year, but by the month.

CENTESIMATION, a milder kind of military puniſhment in caſes of deſertion, mutiny, and the like, when only every hundredth man is executed.

CENTILOQUIUM, denotes a collection of 100 ſentences, opinions, or ſayings.

The centiloquium of Hermes contains 100 aphoriſms, or aſtrological ſentences, ſuppoſed to have been written by ſome Arab, falſely fathered on Hermes Triſmegiſtus. It is only extant in Latin, in which it has ſeveral times been printed.—The centiloquium of Ptolemy is a famous aſtrological piece, frequently confounded with the former, conſiſting likewiſe of 100 ſentences or doctrines, divided into ſhort aphoriſms, entitled alſo in Greek καρπος, as being the fruit or reſult of the former writings of that celebrated aſtronomer, viz. his *quadripartitum* and *almageſtum*; or rather, by reaſon that herein is ſhown the uſe of aſtrological calculations.

CENTIPES, in *Zoology*. See SCOLOPENDRA.

CENTIPED WORM, a term uſed for ſuch worms as have a great many feet, though the number does not amount to 100, as the term ſeems to import.—M. Malouet relates the hiſtory of a man, who, for three years, had a violent pain in the lower part of the forehead near the root of the noſe; at length he felt an itching, and afterwards ſomething moving within his noſtril, which he brought away with his finger; it was a worm of the centiped kind, an inch and a half long, which run ſwiftly. It lived five or ſix days among tobacco. The patient was free of his pain ever after. Mr Littre mentioned a like caſe in 1708, of a larger centiped voided at the noiſe, after it had thrown the woman, in whoſe frontal ſinus it was, into convulſions, and had almoſt deprived her of her reaſon.

CENTLIVRE, SUSANNA, a celebrated comic writer, was the daughter of Mr Freeman of Holbeach, in Lincolnſhire; and had ſuch an early turn for poetry, that it is ſaid ſhe wrote a ſong before ſhe was ſeven years old. Before ſhe was twelve years of age, ſhe could not only read Moliere in French, but enter into the ſpirit of all the characters. Her father dying, left her to the care of a ſtep-mother, whoſe treatment not being agreeable to her, ſhe determined, though almoſt deſtitute of money and every other neceſſary, to go up to London to ſeek a better fortune than what ſhe had hitherto experienced. As ſhe was proceeding on her journey on foot, ſhe was met by a young gentleman from the univerſity of Cambridge, the afterwards well-known Anthony Hammond, Eſq. who was ſo extremely ſtruck with her youth and beauty, that he fell inſtantly in love with her; and inquiring into the particulars of her ſtory, ſoon prevailed upon her unexperienced innocence to ſeize on the protection he offered her, and go with him to Cambridge. After

ſome

CENTER.

Fig. 1.

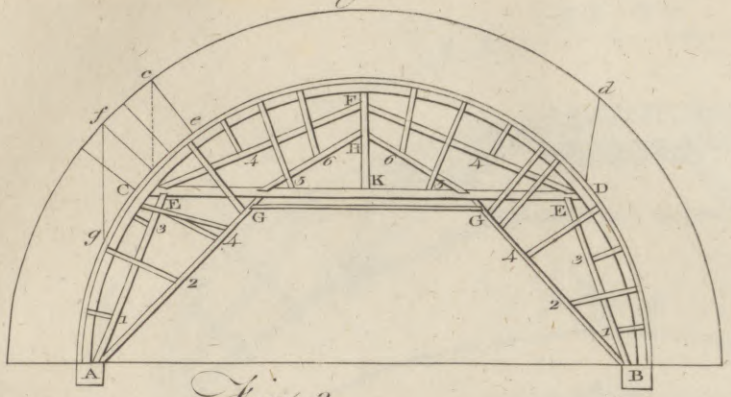


Fig. 2.

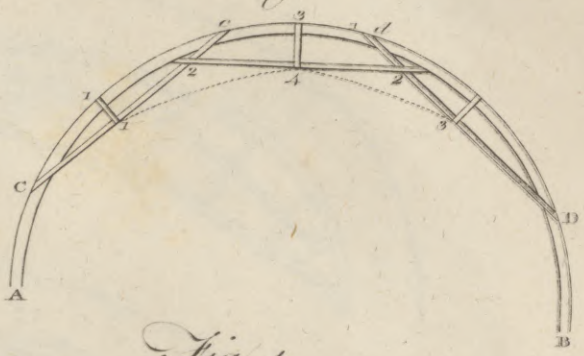


Fig. 3.

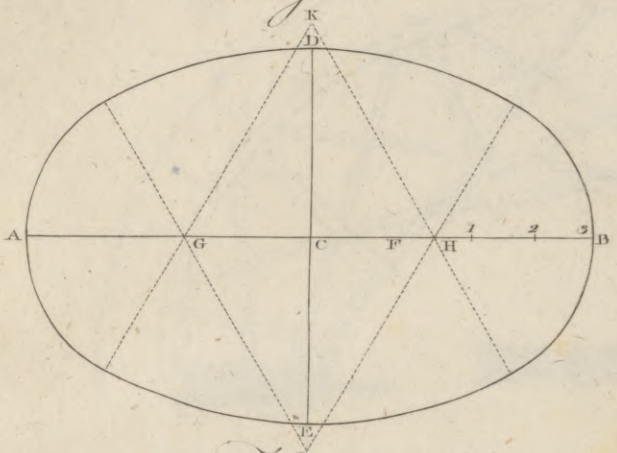


Fig. 4.

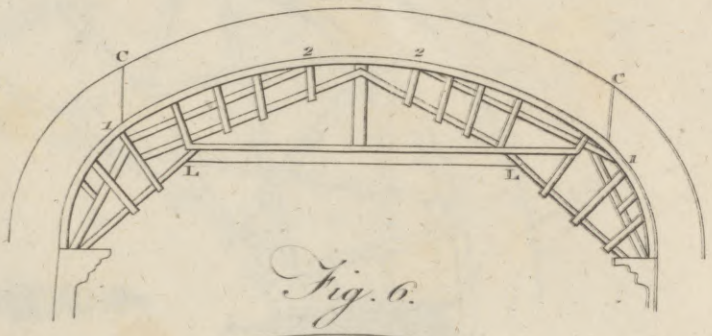


Fig. 6.

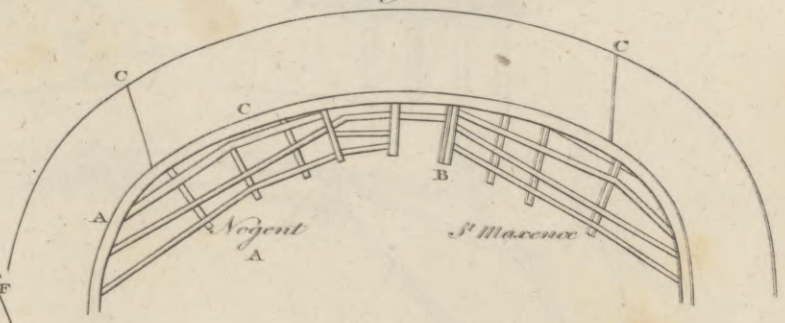


Fig. 5.

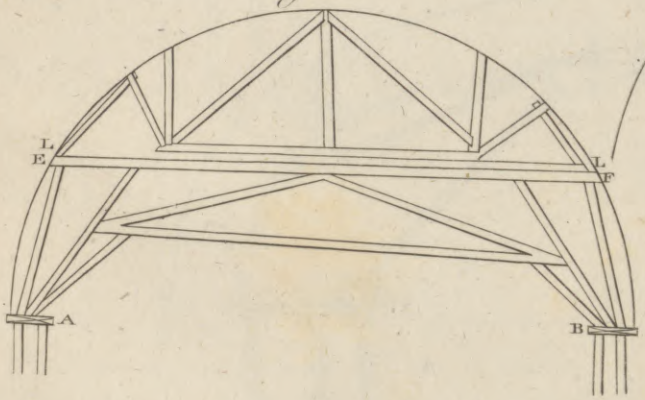
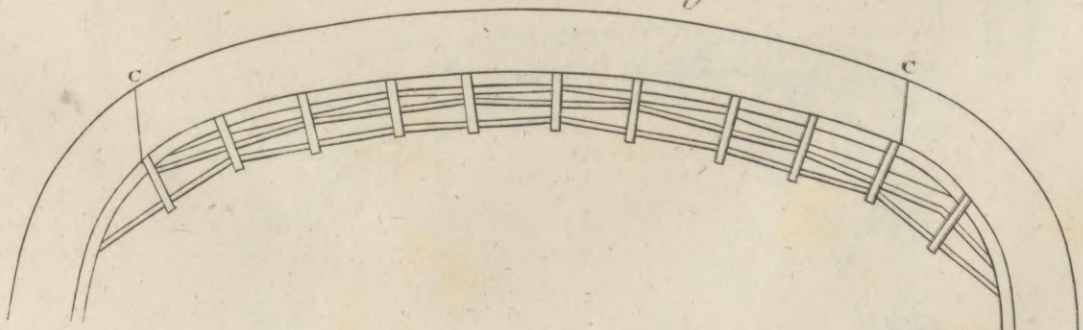


Fig. 7.



Ak Bell Prin. Mar. Sculptor fecit.

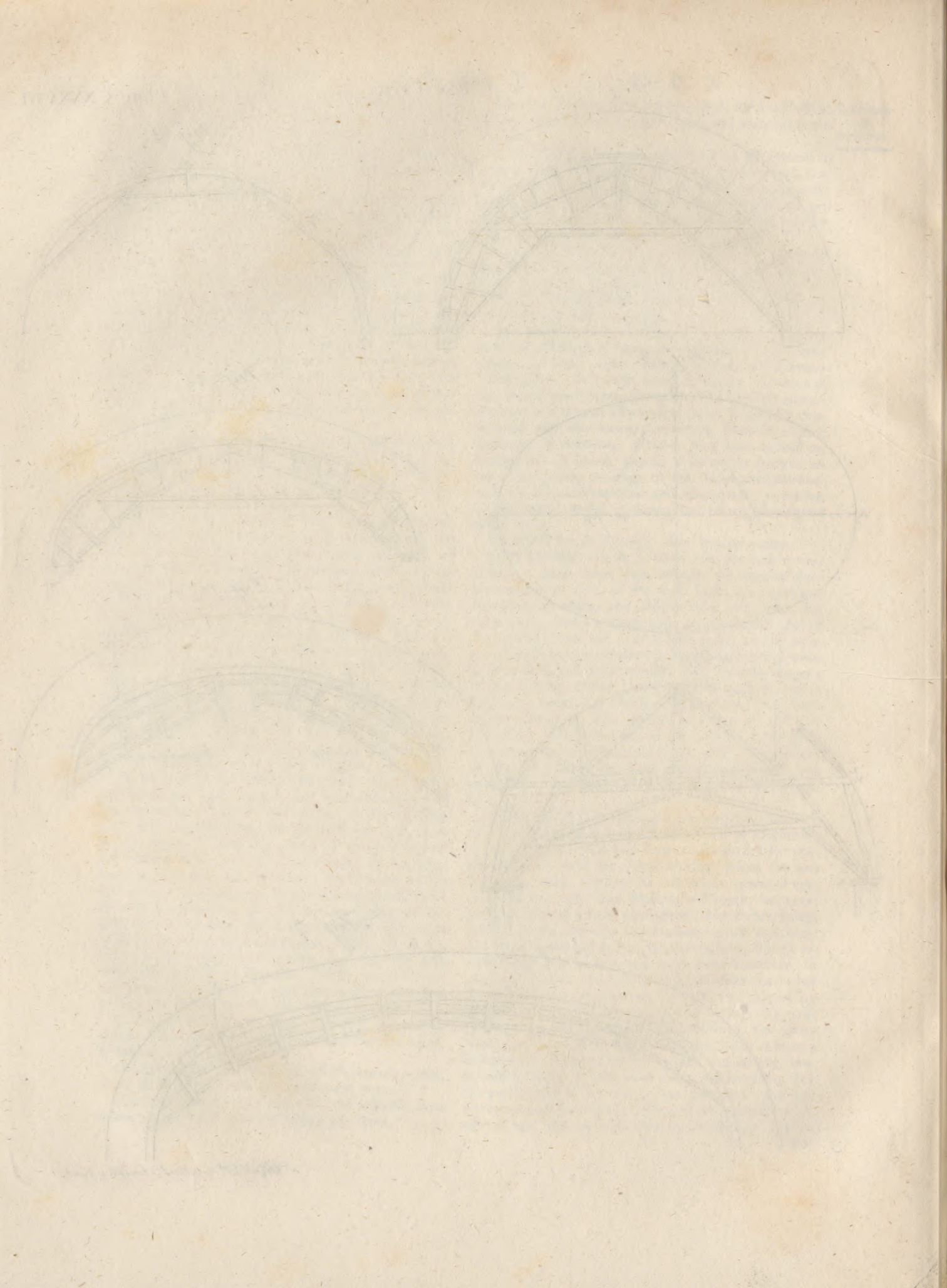


Fig. 8.

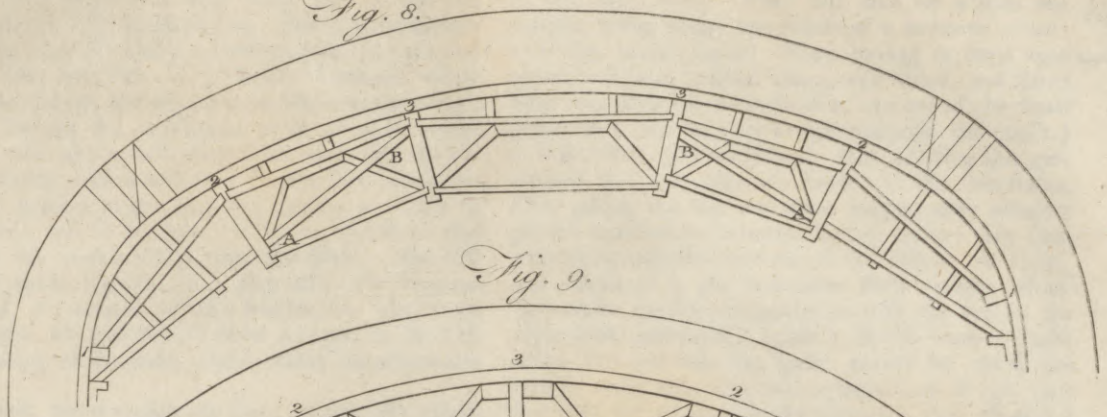


Fig. 9.

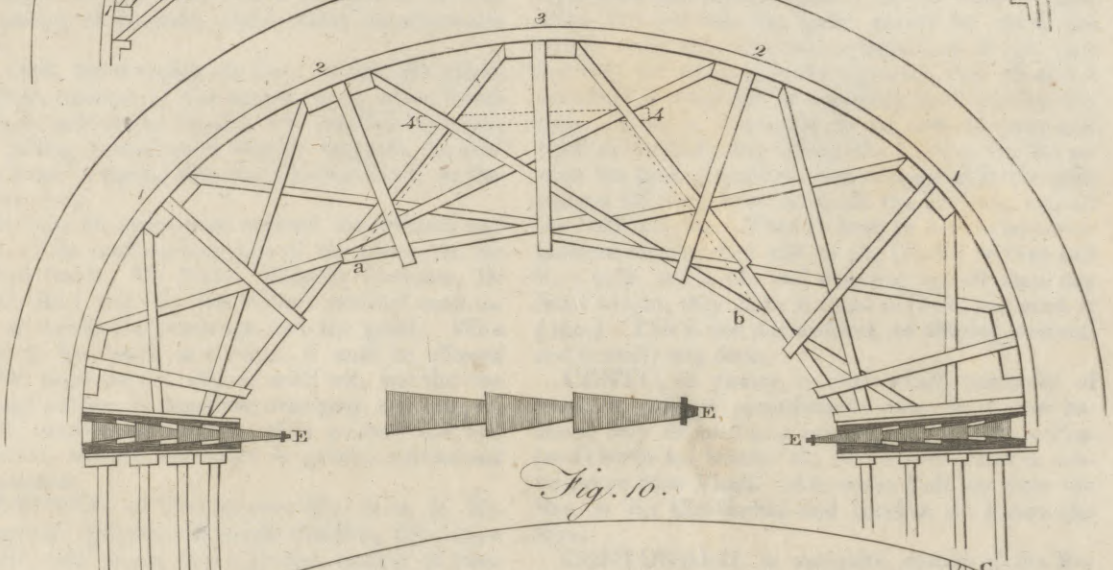


Fig. 10.

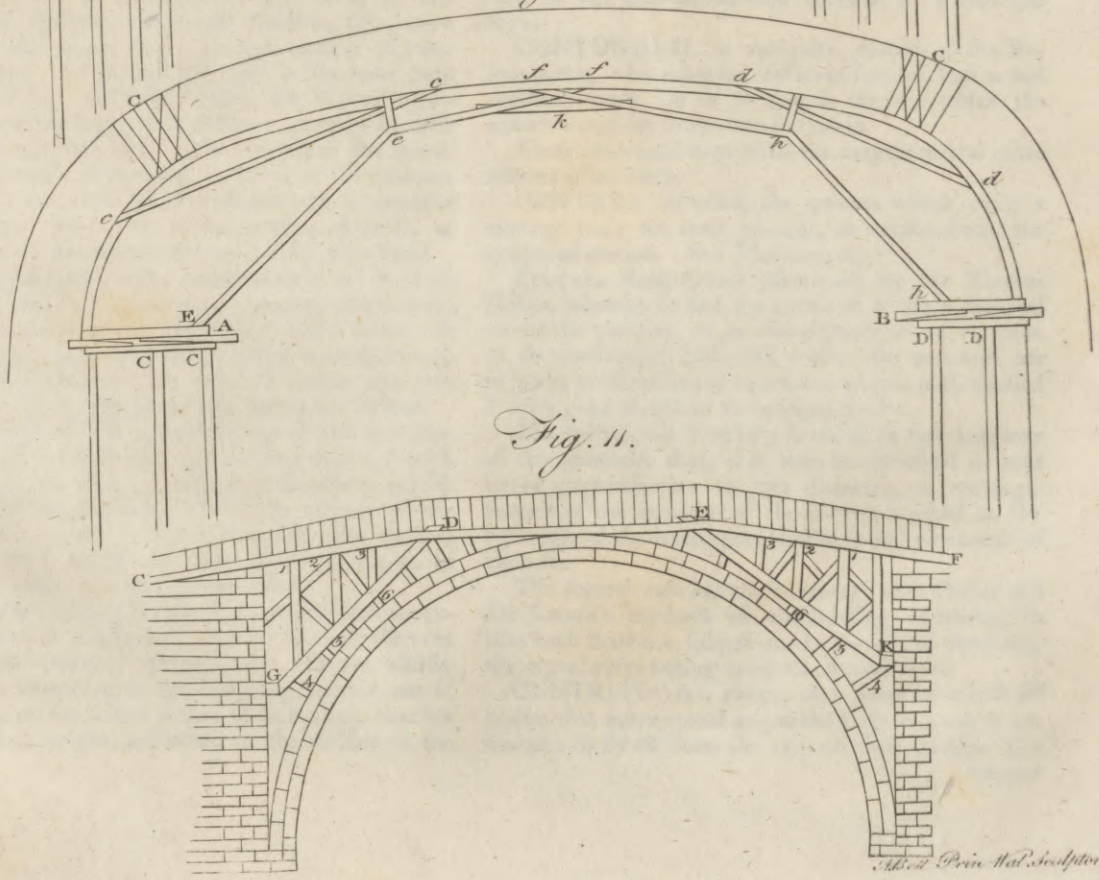
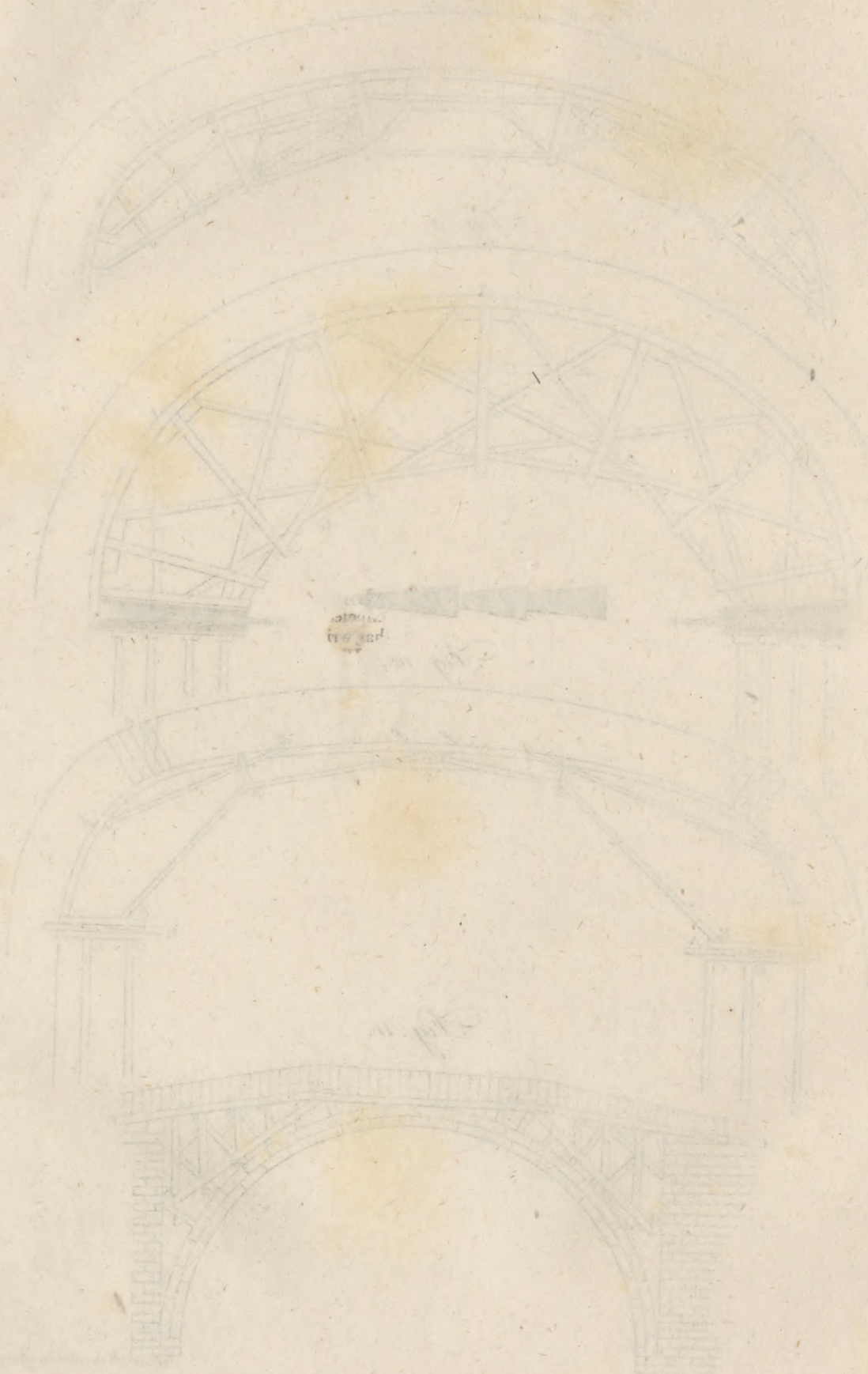


Fig. 11.

Abbott Prin. Wat. Sculptor fecit.



Centner. some months cohabitation, he perſuaded her to come to London, where in a ſhort time, ſhe was married to a nephew of Sir Stephen Fox. But that gentleman not living with her above a twelvemonth, her wit and beauty ſoon procured her a ſecond huſband, whoſe name was Carrol, and who was an officer in the army; but he having the misfortune to be killed in a duel about a year and a half after their marriage, ſhe became a ſecond time a widow. For the ſake of ſupport ſhe now applied to her pen, and became a votary of the muſes; and it is under this name of Carrol that ſome of her earlier pieces were publiſhed. Her firſt attempt was in tragedy, in a play called the *Perjured Huſband;* yet natural vivacity leading her afterwards to comedy, we find but one more attempt in the buſkin, among 18 dramatic pieces which ſhe afterwards wrote.

In 1706, ſhe wounded the heart of one Mr Joſeph Centlivre, yeoman of the mouth, or in other words principal cook to her majeſty, who married her; and, after paſſing ſeveral years happily together, ſhe died at his houſe in Spring Garden, Charing-Croſs, in December 1723.

This lady for many years enjoyed the intimacy and eſteem of the moſt eminent wits of the times, viz. Sir Richard Steele, Mr Rowe, Budgell, Farquhar, Dr Sewell, &c.; and very few authors received more tokens of eſteem and patronage from the great. With regard to her merit as a writer, it muſt be allowed that her plays do not abound with wit, and that the language of them is ſometimes even poor, enervate, incorrect, puerile; but then her plots are buſy and well conducted, and her characters in general natural and well marked.

CENTNER, or DOCIMASTIC HUNDRED, in *Metallurgy* and *Aſſaying*, is a weight diviſible, firſt into a hundred, and thence into a greater number of other ſmaller parts; but though the word is the ſame both with the aſſayers and metallurgiſts, yet it is to be underſtood as expreſſing a very different quantity in their different acceptation of it. The weights of the metallurgiſts are eaſily underſtood, as being of the common proportion; but thoſe of the aſſayers are a thouſand times ſmaller than theſe, as the portions of metals or ores examined by the aſſayers are uſually very ſmall.

The metallurgiſts, who extract metals out of their ores, uſe a weight divided into a hundred equal parts, each part a pound; the whole they call a *centner* or *hundred weight;* the pound is divided into thirty-two parts, or half ounces; and the half ounce into two quarters of ounces, and theſe each into two drachms.

Theſe diviſions and denominations of the metallurgiſts are eaſily underſtood; but the ſame words, though they are equally uſed by aſſayers, with them expreſs very different quantities; for as the centner of the metallurgiſts contains a hundred pounds, the centner of the aſſayers is really no more than one dram, to which the other parts are proportioned.

As the aſſayers weights are divided into ſuch an extreme degree of minuteneſs, and are ſo very different from all the common weights, the aſſayers uſually make them themſelves in the following manner, out of ſmall ſilver, or fine ſolder plates, of ſuch a ſize, that the mark of their weight, according to the diviſion of the dram, which is the *docimaſtic* or aſſaying *centner*, may be put upon them. They firſt take for a baſis one weight, being about two-thirds of a common dram: this they mark (64lb.) Then having at hand ſome granulated lead, waſhed clean, well dried, and ſifted very fine, they put as much of it into one of the ſmall diſhes of a fine balance as will equipoiſe the (64lb.) as it is called, juſt mentioned: then dividing this granulated lead into very nice halves, in the two ſcales, after taking out the firſt ſilver weight, they obtain a perfect equilibrium between the two ſcales; they then pour the granulated lead out of one diſh of the ſcales, and inſtead of it put in another ſilver weight, which they make exactly equiponderant with the lead in the other ſcale, and mark it (32lb.) If this ſecond weight when firſt put into the ſcale, exceed by much the weight of the lead, they take a little from it by a very fine file; but when it comes very near, they uſe only a whetſtone to wear off an extremely ſmall portion at a time. When it is brought to be perfectly even and equal to the lead, they change the ſcales to ſee that no error has been committed, and then go on in the ſame manner till they have made all the diviſions, and all the ſmall weights. Then to have an entire centner or hundred weight, they add to the (64lb.) as they call it, a 32lb. and a 4lb. and weighing againſt them one ſmall weight, they make it equal to them, and mark it (100.) This is the docimaſtical, or aſſaying centner, and is really one dram.

Cento || Centrifugal.

CENTO, in poetry, a work wholly compoſed of verſes or paſſages promiſcuouſly taken from other authors, only diſpoſed in a new form and order.—Proba Falconia [illegible]tten the life of Jeſus Chriſt in centos taken from Virgil. Alexander Roſs has done the like in his Chriſtiados, and Stephen de Pleure the ſame.

CENTONARII, in antiquity, certain of the Roman army, who provided different ſorts of ſtuff called *centones*, made uſe of to quench the fire which the enemy's engines threw into the camp.

Theſe centonarii kept with the carpenters and other officers of artillery.

CENTRAL FORCES, the powers which cauſe a moving body to tend towards, or recede from, the centre of motion. See MECHANICS.

CENTRAL Rule, a rule diſcovered by Mr Thomas Baker, whereby to find the centre of a circle deſigned to cut the parabola in as many points as an equation to be conſtructed hath real roots. Its principal uſe is in the conſtruction of equations, and he hath applied it with good ſucceſs as far as biquadratics.

The central rule is chiefly founded on this property of the parabola, that, if a line be inſcribed in that curve perpendicular to any diameter, a rectangle formed of the ſegments of the inſcript is equal to the rectangle of the intercepted diameter and parameter of the axis.

The central rule has the advantage over Carter and De Latere's methods of conſtructing equations, in that both theſe are ſubject to the trouble of preparing the equation by taking away the ſecond term.

CENTRIFUGAL FORCE, that force by which all bodies that move round any other body in a curve endeavour to fly off from the axis of their motion in a tangent

Centrifugal-Machine.

tangent to the periphery of the curve, and that in every part of it. See MECHANICS.

CENTRIFUGAL-Machine, a very curious machine, invented by Mr Erſkine, for raiſing water by means of a centrifugal force combined with the preſſure of the atmoſphere.

It conſiſts of a large tube of copper, &c. in the form of a croſs, which is placed perpendicular in the water, and reſts at the bottom on a pivot. At the upper part of the tube is a horizontal cog-wheel, which touches the cogs of another in a vertical poſition; ſo that by the help of a double winch, the whole machine is moved round with very great velocity.

Near the bottom of the perpendicular part of the tube is a valve opening upwards; and near the two extremities, but on the contrary ſides of the arms, or croſs part of the tube, are two other valves opening outwards. Theſe two valves are, by the aſſiſtance of ſprings, kept ſhut till the machine is put in motion, when the centrifugal velocity of the water forces them open, and diſcharges itſelf into a ciſtern or reſervoir placed there for that purpoſe.

On the upper part of the arms are two holes, which are cloſed by pieces ſcrewing into the metal of the tube. Before the machine can work, thoſe holes muſt be opened, and water poured in through them, till the whole tube be full: by this means all the air will be forced out of the machine, and the water ſupported in the tube by means of the valve at the bottom.

The tube being thus filled with water, and the holes cloſed by the ſcrew caps, it is turned round by means of the winch, when the water in the arms of the tube acquires a centrifugal force, opens the valves near the extremities of the arms, and flies out with a velocity nearly equal to that of the extremities of the ſaid arms.

The above deſcription will be very eaſily underſtood by the figure we have added on Plate CXXXVII. which is a perſpective view of the centrifugal machine, erected on board a ſhip. ABC is the copper tube. D, a horizontal cog-wheel, furniſhed with twelve cogs. E, a vertical cog-wheel, furniſhed with thirty-ſix cogs. F, F, the double winch. *a*, the valve near the bottom of the tube. *b*, *b*, the two pivots on which the machine turns. *c*, one of the valves in the croſs-piece; the other at *d*, cannot be ſeen in this figure, being on the other ſide of the tube. *e*, *e*, the two holes through which the water is poured into the machine. GH, the ciſtern or reſervoir. I, I, part of the ſhip's deck. The diſtance between the two valves, *c*, *d*, is ſix feet. The diameter of theſe valves is about three inches; and that of the perpendicular tube about ſeven inches.

If we ſuppoſe the men who work the machines can turn the winch round in three ſeconds, the machine will move round its axis in one ſecond; and conſequently each extremity of the arms will move with a velocity of 18.8 feet in a ſecond. Therefore a column of water of three inches diameter will iſſue through each of the valves with a velocity of 18.8 feet in a ſecond: but the area of the aperture of each of the valves is 7.14 inches; which being multiplied by the velocity in inches=225.6, gives 1610.784 cubic inches, the quantity of water diſcharged through one of the apertures in one ſecond; ſo that the whole quantity diſcharged in that ſpace of time through both the apertures is = 3221.568 inches; or 193294.08 cubic inches in one minute. But 60812 cubic inches makes a tun, beer-meaſure; conſequently, if we ſuppoſe the centrifugal machine revolves round its axis in one ſecond, it will raiſe nearly 3 tuns 44 gallons in one minute: but this velocity is certainly too great, at leaſt to be held for any conſiderable time; ſo that, when this and other deficiencies in the machine are allowed for, two tuns is nearly the quantity that can be raiſed by it in one minute.

Centripetal || Centurion.

It will perhaps be unneceſſary to obſerve, that as the water is forced up the perpendicular tube by the preſſure of the atmoſphere, this machine cannot raiſe water above 32 feet high.

An attempt was made to ſubſtitute this machine in place of the pumps commonly uſed on ſhip-board; but the labour of working was found to be ſo great as to render the machine inferior to the chain-pump. A conſiderable improvement, we apprehend, would be, to load with a weight of lead the ends of the tubes through which the water iſſues, which would make the machine turn with a great deal more eaſe, as the centrifugal force of the lead would in ſome meaſure act the part of a fly.

CENTRIPETAL FORCE, that force by which a body is everywhere impelled, or any how tends, towards ſome point as a centre. See MECHANICS.

CENTRISCUS, in *Ichthyology*, a genus of fiſhes belonging to the order of amphibia nantes. See ICHTHYOLOGY *Index*.

CENTRONIA, in *Natural Hiſtory*, a name by which the echini marini have been diſtinguiſhed. Dr Hill makes them a diſtinct claſs of animals living under the defence of ſhelly coverings formed of one piece, and furniſhed with a vaſt number of ſpines moveable at the creature's pleaſure.

CENTUMCELLÆ, in *Ancient Geography*, Trajan's villa in Tuſcany, on the coaſt, three miles from Algæ; with an excellent port, called *Trajanus Portus*, (Ptolemy); and a factitious iſland at the mouth of the port, made with a huge block of ſtone, on which two turrets roſe, with two entrances into the baſon or harbour, (Rutilius). Now *Civita Vecchia*. E. Long. 12. 30. N. Lat. 42°.

CENTUMVIRI, in Roman antiquity, judges appointed to decide common cauſes among the people: They were choſen three out of each tribe; and though five more than a hundred, were nevertheleſs called *centumviri*, from the round number *centum* a hundred.

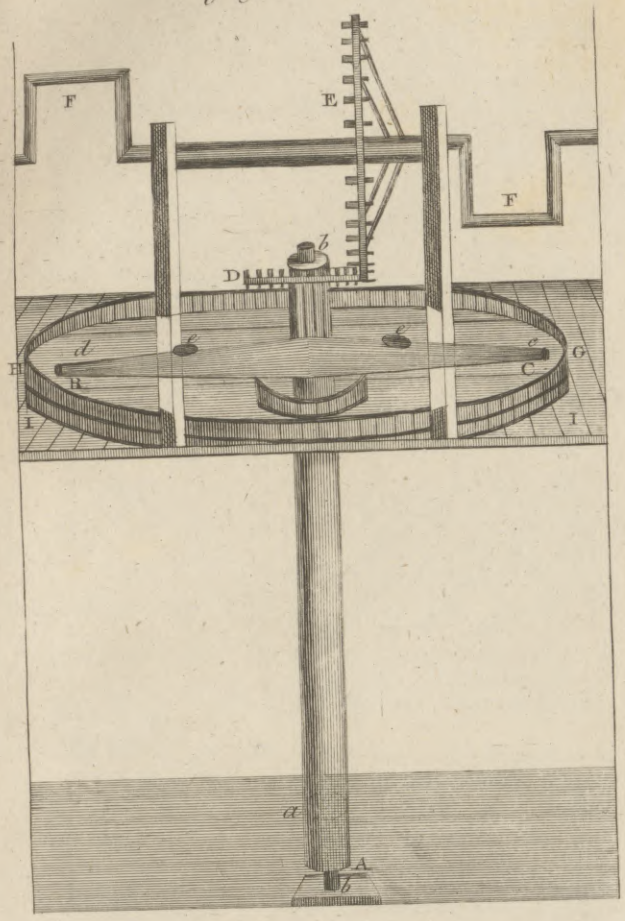
CENTUNCULUS. See BOTANY *Index*.

CENTURION, among the Romans, an officer in the infantry, who commanded a century, or a hundred men.

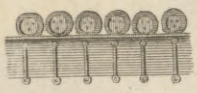
In order to have a proper notion of the centurions, it muſt be remembered, that every one of the thirty manipuli* in a legion was divided into two *ordines*, or ranks; and conſequently the three bodies of the haſtati, principes, and triarii, into 20 orders a piece, as into 10 manipuli. Now, every manipulus was allowed two centurions, or captains, one to each order or century: and, to determine the point of priority between them, they were created at two different elections. The 30 who were made firſt always took the precedency of their fellows; and therefore commanded the right-hand orders, as the others did the left. The triarii,

* See *Manipulus*.

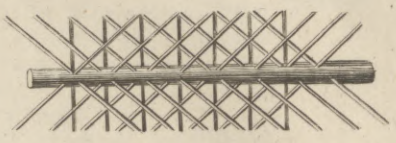
Centrifugal Machine.



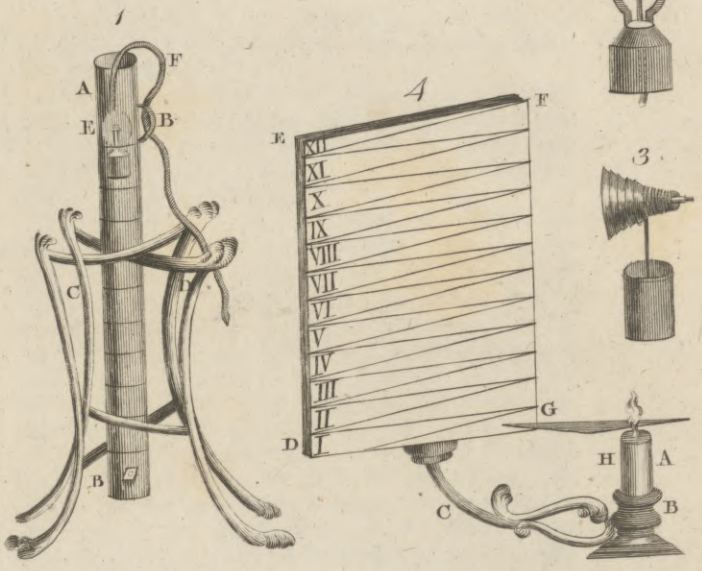
Chain wales.



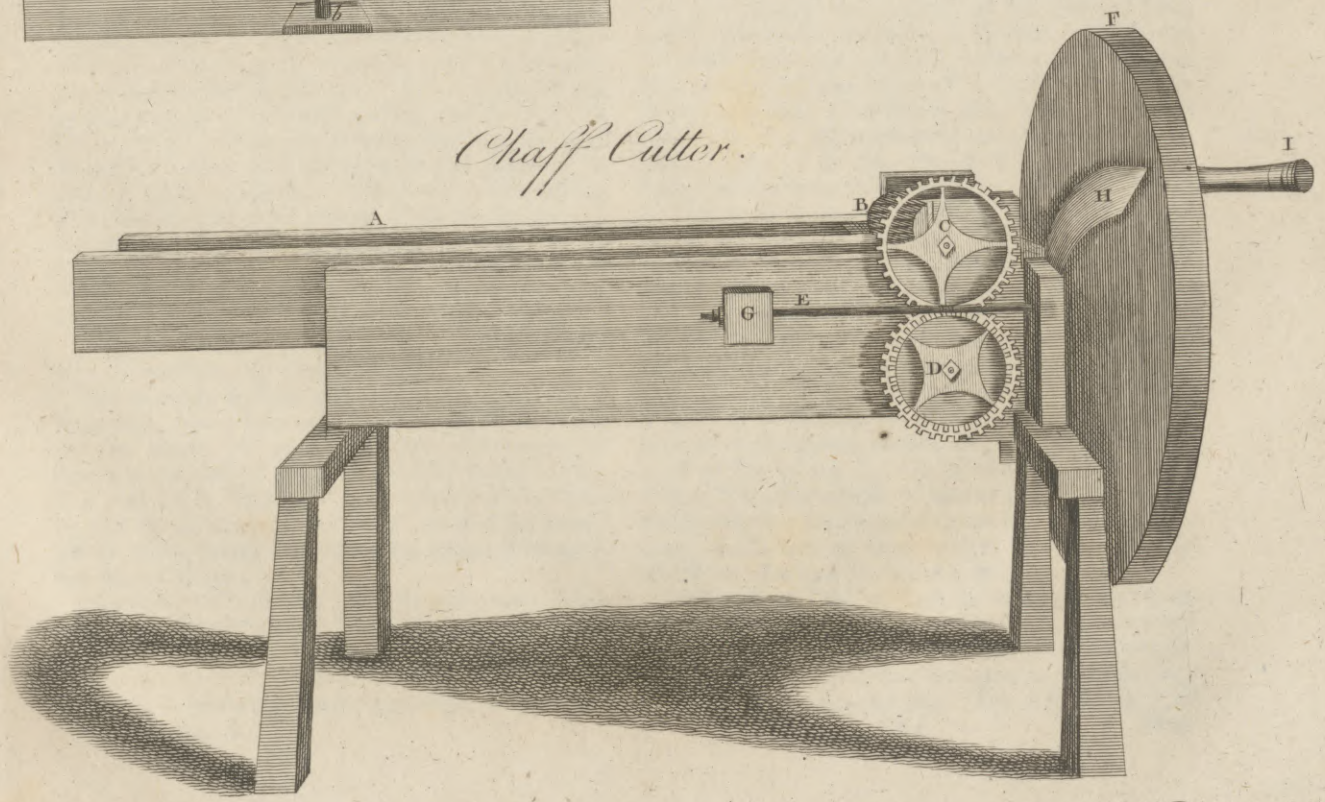
Cheval de Frise.



Chronometer.



Chaff Cutter.



A. Bell Prin. Wal. Sculptor fecit

Centuripæ, or Century.

or *pilani*, ſo called from their weapon the *pilum*, being eſteemed the moſt honourable, had their centurions elected firſt, next to them the principes, and afterwards the haſtati; whence they were called *primus et ſecundus pilus*, *primus et ſecundus princeps*, *primus et ſecundus haſtatus*; and ſo on. Here it may be obſerved, that *primi ordines* is ſometimes uſed in hiſtorians for the centurions of theſe orders; and the centurions are ſometimes ſtyled *principes ordinum*, and *principes centurionum*. We may take notice too what a large field there lay for promotion: firſt through all the orders of the haſtati; then quite through the principes; and afterwards from the laſt order of the triarii to the primipilus, the moſt honourable of the centurions, and who deſerves to be particularly deſcribed. This officer, beſides his title of primipilus, went under the ſeveral titles of *dux legionis*, *præfectus legionis*, *primus centurionum*, and *primus centurio*; and was the firſt centurion of the triarii in every legion. He preſided over all the other centurions, and generally gave the word of command by order of the tribunes. Beſides this he had the care of the eagle or chief ſtandard of the legion: hence, *aquilæ præeſſe*, is to bear the dignity of primipilus; and hence *aquila* is taken by Pliny for the ſaid office. Nor was this ſtation only honourable, but very profitable too: for he had a ſpecial ſtipend allowed him, probably as much as a knight's eſtate; and, when he left that charge, was reputed equal to the members of the equeſtrian order, bearing the title of *primipilarius*, in the ſame manner as thoſe who had diſcharged the greateſt civil offices were ſtyled ever after, *conſulares*, *cenſorii*, &c.

CENTURIPÆ, Centoripa, or Centuripe, in *Ancient Geography*, a town in the ſouth-weſt of the territory of Etna, on the river Cyamaſorus: Now *Centorbi*, or *Centurippi*. It was a democratical city, which, like Syracuſe, received its liberty from Timoleon. Its inhabitants cultivated the fine arts, particularly ſculpture and engraving. In digging for the remains of antiquities, cameos are nowhere found in ſuch abundance as at Centurippi and its environs. The ſituation of the place is romantic: it is built on the ſummit of a vaſt group of rocks, which was probably choſen as the moſt difficult of acceſs, and conſequently the propereſt in times of civil commotion. The remains ſtill exiſting of its ancient bridge are a proof of its having been a conſiderable city. Cicero ſpeaks of it as ſuch. It was taken by the Romans, plundered and oppreſſed by Verres, deſtroyed by Pompey, and reſtored by Octavius, who made it the reſidence of a Roman colony.

CENTURY, in a general ſenſe, any thing divided into, or conſiſting of, a hundred parts.

The marquis of Worceſter publiſhed a *Century* of inventions, (for a ſpecimen of which, ſee Acoustics, and Dr Hooke has given a *decimate* of inventions, as part of a *Century*, of which he affirmed himſelf maſter. It is remarkable, that both in the century of the former, and the decimate of the latter, we find the principle on which Savary's fire or ſteam engine is founded. See *Steam-Engine*.

Century, in antiquity. The Roman people, when they were aſſembled for the electing of magiſtrates, enacting of laws, or deliberating upon any public affair, were always divided into centuries, and voted by centuries, in order that their votes might be the more eaſily collected, whence theſe aſſemblies were called *comitia centuriata*. The Roman cohorts were alſo divided into centuries. See Centurion and Cohort.

Century II Ceos.

Century, in *Chronology*, the ſpace of 100 years. This method of computing by centuries is generally obſerved in church hiſtory, commencing from the time of our Saviour's incarnation: in which ſenſe we ſay the firſt century, the ſecond century, &c.

Centuries of Magdeburg, a famous eccleſiaſtical hiſtory, ranged into 13 centuries, carried down to the year 1298, compiled by ſeveral hundred proteſtants of Magdeburg, the chief of whom was Flacius Illyricus.

CENTUSSIS in Roman antiquity, a coin containing 100 aſſes.

CENTZONTLI, in *Ornithology*, the Mexican name of the *Turdus polyglottus*. See Turdus, Ornithology *Index*.

CEODES, in *Botany*: A genus of the dicœcia order, belonging to the polygamia claſs of plants. There is no calyx; the corolla is monopetalous, with a ſhort turbinated tube; the ſtamina are ten ſubulated filaments; the antheræ roundiſh.

CEORLES, the name of one of the claſſes or orders into which the people were diſtinguiſhed among the Anglo-Saxons. The ceorles, who were perſons completely free, and deſcended from a long race of freemen, conſtituted a middle claſs between the labourers and mechanics (who were generally ſlaves, or deſcended from ſlaves), on the one hand, and the nobility on the other. They might go where they pleaſed, and purſue any way of life that was moſt agreeable to their humour; but ſo many of them applied to agriculture, and farming the lands of the nobility, that a ceorl was the moſt common name for a huſbandman or farmer in the Anglo-Saxon times. Theſe ceorls, however, ſeem in general to have been a kind of gentlemen farmers; and if any one of them proſpered ſo well as to acquire the property of five hydes of land, upon which he had a church, a kitchen, a bell-houſe, and great gate, and obtained a ſeat and office in the king's court, he was eſteemed a nobleman or thane. If a ceorl applied to learning, and attained to prieſt's orders, he was alſo conſidered as a thane; his weregild, or price of his life, was the ſame, and his teſtimony had the ſame weight in a court of juſtice. When he applied to trade, and made three voyages beyond ſea, in a ſhip of his own, and with a cargo belonging to himſelf, he was alſo advanced to the dignity of a thane. But if a ceorl had a greater propenſity to arms than to learning, trade, or agriculture, he then became the fithcunman, or military retainer, to ſome potent and warlike earl, and was called the *huſcarle* of ſuch an earl. If one of theſe huſcarles acquitted himſelf ſo well as to obtain from his patron either five hydes of land, or a gilt ſword, helmet, and breaſtplate, as a reward of his valour, he was likewiſe conſidered as a thane. Thus the temple of honour ſtood open to theſe ceorls, whether they applied themſelves to agriculture, commerce, letters, or arms, which were then the only profeſſions eſteemed worthy of a freeman.

CEOS, Cea, Cia, or Cos, in *Ancient Geography*, one of the Cyclades, lies oppoſite to the promontory of Achaia called *Sunium*, and is 50 miles in compaſs. This iſland is commended by the ancients for its fertility and the richneſs of its paſtures. The firſt ſilk ſtuffs, if

Ceos || Cephalic Medicines.

Pliny and Solinus are to be credited, were wrought here. Ceos was particularly famous for the excellent figs it produced. It was firſt peopled by Ariſtæus, the ſon of Apollo and Cyrene, who being grieved for the death of his ſon Actæon, retired from Thebes, at the perſuaſion of his mother, and went over with ſome Thebans to Ceos, at that time uninhabited. Diodorus Siculus tells us, that he retired to the iſland of Cos; but the ancients, as Servius obſerves, called both theſe iſlands by the name of Cos. Be that as it will, the iſland of Ceos became ſo populous, that a law prevailed there, commanding all perſons upwards of ſixty to be poiſoned, that others might be able to ſubſiſt; ſo that none above ſixty were to be ſeen in the iſland, being obliged, after they arrived at that age, either to ſubmit to the law, or abandon the country, together with their effects. Ceos had, in former times, four famous cities, viz. Julis, Carthæa, Coreſſus, and Præeſſa. The two latter were, according to Pliny, ſwallowed up by an earthquake. The other two flouriſhed in Strabo's time. Carthæa ſtood on a riſing ground, at the end of a valley, about three miles from the ſea. The ſituation of it agrees with that of the preſent town of Zea, which gives name to the whole iſland. The ruins both of Carthæa and Julis are ſtill remaining; thoſe of the latter take up the whole mountain, and are called by the modern inhabitants Polis, that is, *the city*. Near this place are the ruins of a ſtately temple, with many pieces of broken pillars, and ſtatues of moſt exquiſite workmanſhip. The walls of the city were of marble, and ſome pieces are ſtill remaining above 12 feet in length. Julis was, according to Strabo, the birth-place of Simonides, Bacchylides, Eraſiſtratus, and Ariſto. The Oxford marbles tell us, that Simonides, the ſon of Leoprepis, invented a ſort of artificial memory, the principles of which he explained at Athens; and add, that he was deſcended of another Simonides, who was a poet no leſs renowned than himſelf. One of theſe two poets invented thoſe melancholy verſes which were ſung at funerals, and are called by the Latins *næniæ*. Strabo ſays, that the Athenians, having beſieged the city of Julis, raiſed the ſiege, upon advice that the inhabitants had reſolved to murder all the children under a certain age, that uſeful perſons might not be employed in looking after them. Ceos was, with the other Greek iſlands, ſubdued by the Romans, and beſtowed upon the Athenians by Mark Antony the triumvir, together with Ægina, Tinos, and ſome other adjoining iſlands, which were all reduced to one Roman province by Veſpaſian. The iſland is now called *Zea*.

CEPA, the ONION. See ALLIUM, BOTANY *Index*.

CEPHALANTHUS, BUTTON-WOOD. See BOTANY *Index*.

CEPHALIC, in a general meaning, ſignifies any thing belonging to the head.

CEPHALIC *Medicines*, are remedies for diſorders of the head. Cordials are comprehended herein, as are alſo whatever promotes a free circulation of the blood through the brain.

Except when the diſorder ariſes from exceſs of heat, or an inflammatory diſpoſition in the head, moiſt topicals ſhould never be uſed, but always dry ones.

To rub the head after it is ſhaved proves an inſtantaneous cure for a cephalalgia, a ſtuffing of the head, and a weakneſs of the eyes, ariſing from a weak and relaxed ſtate of the fibres. And as by every freſh evacuation of the humours their quantity is not only leſſened, but alſo their recrementitious parts derived thither, the more frequently the head is ſhaved, the larger quantity of humour is diſcharged; ſo that the frequent ſhaving of the head and beard is likewiſe a perpetual bliſter; and in as much as it is uſeful, it is a cephalic. Cephalic Vein || Ceram.

CEPHALIC *Vein*, in *Anatomy*, creeps along the arm between the ſkin and the muſcles, and divides it into two branches; the external goes down to the wriſt, where it joins the baſilica, and turns up to the back of the hand; the internal branch, together with a ſmall one of the baſilica, makes the mediana.

The ancients uſed to open this vein for diſorders of the head, for which reaſon it bears this name; but a better acquaintance with the circulation of the blood informs us that there is no foundation for ſuch a notion.

CEPHALENIA, or CEPHALLENIA, an iſland of the Ionian ſea, between Ithaca and Zacynthus, known in Homer's time by the names of Samos and Epirus Melæna, is about eighty miles in length, forty in breadth, and a hundred and thirty in compaſs. It had anciently four cities, one of which bore the name of the iſland. Strabo tells us, that in his time there were only two cities remaining; but Pliny ſpeaks of three; adding, that the ruins of Same, which had been deſtroyed by the Romans, were ſtill in being. Same was the metropolis of the iſland, and is ſuppoſed to have ſtood in the place which the Italians call Porto Guiſcardo. The names of the four cities were, according to Thucydides, Same, Prone, Cranii, and Palæ. This iſland was ſubdued by the Thebans, under the conduct of Amphitryo, who is ſaid to have killed Pterelas, who then reigned here. While Amphitryo was carrying on the war in Cephalenia, then called Samos, one Cephalus, a man of great diſtinction at Athens, having accidentally killed his wife Procris in ſhooting at a deer, fled to Amphitryo, who, pitying his caſe, not only received him kindly, but made him governor of the iſland, which henceforth was called Cephalenia. After it had been long in ſubjection to the Thebans, it fell under the power of the Macedonians, and was taken from them by the Ætolians, who held it till it was reduced by M. Fulvius Nobilior, who having gained the metropolis after a four months ſiege, ſold all the citizens for ſlaves, adding the whole iſland to the dominions of the republic. Now called CEPHALONIA.

CEPHALONIA, the capital of an iſland of the ſame name, ſituated in the Mediterranean, near the coaſt of Epirus, and ſubject to the Venetians. E. Long. 21. N. Lat. 30. 30.

CEPHEUS, in fabulous hiſtory, a king of Arcadia, on whoſe head Minerva faſtening one of Meduſa's hairs, he was rendered invincible.

CEPHEUS, in *Aſtronomy*, a conſtellation of the northern hemiſphere. See ASTRONOMY, N° 406.

CERAM, an iſland in the Indian ocean, between the Molucca iſlands on the north, and thoſe of Amboyna and Banda on the ſouth, lying between E. Long. 126. and 129. in S. Lat. 3. It is about 150 miles long, and 60 broad; and here the Dutch have

Cerambyx || Cerberus.

have a fortreſs, which keeps the natives in ſubjection.

CERAMBYX, in *Zoology*, a genus of inſects of the beetle kind, belonging to the order of inſects coleoptera. See ENTOMOLOGY *Index*.

CERASTES, in *Zoology*, the trivial name of a ſpecies of ANGUIS and COLUBER. See OPHIOLOGY *Index*.

CERASTIUM, MOUSE-EAR. See BOTANY *Index*.

CERASUS. See PRUNUS, BOTANY *Index*.

CERATE, in *Pharmacy*, a thickiſh kind of ointment, applied to ulcerations, excoriations, &c. See PHARMACY *Index*.

CERATION, the name given by the ancients to the ſmall ſeeds of ceratonia, uſed by the Arabian phyſicians as a weight to adjuſt the doſes of medicines; as the grain weight with us took its riſe from a grain of barley.

CERATION, or *ceratium*, was alſo a ſilver coin, equal to one-third of an obolus.

CERATOCARPUS. See BOTANY *Index*.

CERATONIA, the CAROB TREE, or *St John's bread*. See BOTANY *Index*. The pods of this plant are called *St John's bread*, from an ill-founded aſſertion of ſome writers on Scripture, that theſe were the locuſts which St John ate with his honey in the wilderneſs.

CERATOPHYLLUM. See BOTANY *Index*.

CERAUNIA, CERAUNIAS, or CERAUNIUS *Lapis*, in *Natural Hiſtory*, a ſort of flinty ſtone, of no certain colour, but of a pyramidal or wedge-like figure; popularly ſuppoſed to fall from the clouds in the time of thunder-ſtorms, and to be poſſeſſed of divers notable virtues, as promoting ſleep, preſerving from lightning, &c. The word is from the Greek κεραυνος, *thunderbolt*. The ceraunia is the ſame with what is otherwiſe called the thunder-ſtone, or thunder-bolt; and alſo ſometimes *ſagitta*, or arrow's-head, on account of its ſhape. The ceraunie are frequently confounded with the ombriæ and brontiæ, as being all ſuppoſed to have the ſame origin. The generality of naturaliſts take the ceraunia for a native ſtone, formed among the pyrites, of a ſaline, concrete, mineral juice. Mercatus and Dr Woodward aſſert it to be artificial, and to have been faſhioned thus by tools. The ceraunia, according to theſe authors, are the heads of the ancient weapons of war, in uſe before the invention of iron; which, upon the introduction of that metal, growing into diſuſe, were diſperſed in the fields through this and the neighbouring country. Some of them had poſſibly ſerved in the early ages for axes, others for wedges, others for chiſſels; but the greater part for arrow-heads, darts, and lances. The ceraunia is alſo held by Pliny for a white or cryſtal-coloured gem, that attracted lightning to itſelf. What this was, is hard to ſay. Prudentius alſo ſpeaks of a yellow ceraunia; by which he is ſuppoſed to mean the carbuncle or pyropus.

CERBERA See BOTANY *Index*.

CERBERUS, in fabulous hiſtory, a dreadful three-headed maſtiff, born of Typhon and Echidna, and placed to guard the gates of hell, He fawned upon thoſe who entered, but devoured all who attempted to get back. He was, however, maſtered by Hercules, who dragged him up to the earth, when, in ſtruggling, a foam dropped from his mouth, which produced the poiſonous herb called *aconite* or *wolf's-bane*.

Cercele || Cerealia.

Some have ſuppoſed that Cerberus is the ſymbol of the earth, or of all-devouring time; and that its three mouths repreſent the preſent, paſt, and future. The victory obtained by Hercules over this monſter denotes the conqueſt which this hero acquired over his paſſions. Dr Bryant ſuppoſes that Cerberus was the name of a place, and that it ſignified the temple of the Sun; deriving it from *Kir Abor*, *the place of light*. This temple was alſo called *Tor-Caph-El*, which was changed to τριπυραλος; and hence Cerberus was ſuppoſed to have had three heads. It was likewiſe called *Tor-Keren*, *Turris Regia*; whence τρι κερηνος, from τρεις, *three*, and κερηνον, *head*.

CERCELE, in *Heraldry*: a croſs cercele is a croſs which, opening at the ends, turns round both ways like a ram's horn. See CROSS.

CERCIS, the JUDAS-TREE. See BOTANY *Index*.

CERCOPITHECI, in *Natural Hiſtory*, the name given by Mr Ray to monkeys, or the claſs of apes with long tails. See SIMIA, MAMMALIA *Index*.

CERDA, JOHN LEWIS DE LA, a learned Jeſuit of Toledo, wrote large commentaries on Virgil, which have been much eſteemed; alſo ſeveral other works. He died in 1643, aged 80.

CERDONIANS, ancient heretics, who maintained moſt of the errors of Simon Magus, Saturninus, and the Manichees. They took their name from their leader *Cerdon*, a Syrian, who came to Rome in the time of Pope Hyginus, and there abjured his errors: but in appearance only; for he was afterwards convicted of perſiſting in them, and accordingly caſt out of the church again. Cerdon aſſerted two principles, the one good and the other evil: this laſt, according to him, was the creator of the world, and the god that appeared under the old law. The firſt, whom he called *unknown*, was the father of Jeſus Chriſt; who, he taught, was incarnate only in appearance, and was not born of a virgin; nor did he ſuffer death but in appearance. He denied the reſurrection, and rejected all the books of the Old Teſtament, as coming from an evil principle. Marcion, his diſciple, ſucceeded him in his errors.

CEREALIA, in *Antiquity*, feaſts of Ceres, inſtituted by Triptolemus, ſon of Celeus king of Eleuſine in Attica, in gratitude for his having been inſtructed by Ceres, who was ſuppoſed to have been his nurſe, in the art of cultivating corn and making bread.

There were two feaſts of this kind at Athens; the one called *Eleuſinia*, the other *Theſmophoria*. See the article ELEUSINIA. What both agreed in, and was common to all the *cerealia*, was, that they were celebrated with a world of religion and purity; ſo that it was eſteemed a great pollution to meddle, on thoſe days, in conjugal matters. It was not Ceres alone that was honoured here, but alſo Bacchus. The victims offered were hogs, by reaſon of the waſte they make in the products of the earth: whether there was any wine offered or not, is matter of much debate among the critics. Plautus and Macrobius ſeem to countenance the negative ſide; Cato and Virgil the poſitive. Macrobius ſays, indeed, they did not offer wine to Ceres, but *mulſum*, which was a compoſition of wine and honey boiled up together: that the ſa-

Cerealia || Ceremonial.

crifice made on the 21ſt of December to that goddeſs and Hercules, was a pregnant ſow, together with cakes and mulſum; and that this is what Virgil means by *Mili Baccho*. The *cerealia* paſſed from the Greeks to the Romans, who held them for eight days ſucceſſively; commencing, as generally held, on the fifth of the ides of April. It was the women alone who were concerned in the celebration, all dreſſed in white: the men, likewiſe in white, were only ſpectators. They ate nothing till after ſun-ſet; in memory of Ceres, who in her ſearch after her daughter took no repaſt but in the evening.

After the battle of Cannæ, the deſolation was ſo great at Rome, that there were no women to celebrate the feaſt, by reaſon they were all in mourning; ſo that it was omitted that year.

CEREALIA, in *Botany*, from *Ceres*, the goddeſs of corn; Linnæus's name for the larger eſculent ſeeds of the graſſes: theſe are rice, wheat, rye, barley, oats, millet, panic graſs, Indian millet, holcus, zizania, and maize. To this head may be likewiſe referred darnel, (*lolium*); which, by preparation, is rendered eſculent.

CEREBELLUM, the hinder part of the head. See ANATOMY *Index*.

CEREBRUM, the BRAIN. Its ſtructure and uſe are not ſo fully known as ſome other parts of the body; and different authors conſider it in various manners. However, according to the obſervations of thoſe moſt famed for their accuracy and dexterity in anatomical inquiries, its general ſtructure is as given in ANATOMY *Index*.

Dr Hunter obſerves, that the principal parts of the medullary ſubſtance of the brain in idiots and madmen, ſuch as the *thalami nervorum opticorum*, and *medulla oblongata*, are found entirely changed from a medullary to a hard, tough, dark-coloured ſubſtance, ſometimes reſembling white leather.

CEREMONIAL (*ceremoniale*), a book in which is preſcribed the order of the ceremonies to be obſerved in certain actions and occaſions of ſolemnity and pomp. The ceremonial of the Roman church is called *ordo Romanus*. It was publiſhed in 1516 by the biſhop of Corcyra; at which the college of cardinals were ſo ſcandalized, that ſome of them voted to have the author as well as book burnt, for his temerity in expoſing the ſacred ceremonies to the eyes of profane people.

CEREMONIAL, is alſo uſed for the ſet or ſyſtem of rules and ceremonies which cuſtom has introduced for regulating our behaviour, and which perſons practiſe towards each other, either out of duty, decency, or civility.

CEREMONIAL, in a more particular ſenſe, denotes the manner in which princes and ambaſſadors uſe to receive and to treat one another. There are endleſs diſputes among ſovereigns about the *ceremonial*: ſome endeavouring to be on a level, and others to be ſuperior; inſomuch that numerous ſchemes have been propoſed for ſettling them. The chief are, 1. To accommodate the difference by compromiſe or alternation; ſo that one ſhall precede now, the other the next time; or one in one place, and the other in another: 2. By ſeniority; ſo that an elder prince in years ſhall precede a younger, without any other diſtinction. Theſe expedients, however, have not yet been accepted by any, except ſome *alternate princes*, as they are called, in Germany. Ceremonial || Ceres.

CEREMONIAL is more particularly uſed in ſpeaking of the laws and regulations given by Moſes relating to the worſhip of God among the ancient Jews. In this ſenſe it amounts to much the ſame with what is called the *Levitical law*, and ſtands contradiſtinguiſhed from the moral as well as judicial law.

CEREMONY, an aſſemblage of ſeveral actions, forms, and circumſtances, ſerving to render a thing more magnificent and ſolemn.

In 1646, M. Ponce publiſhed a hiſtory of ancient ceremonies, tracing the riſe, growth, and introduction of each rite into the church, and its gradual advancement to ſuperſtition therein. Many of them were borrowed from Judaiſm; but more ſeemingly from Paganiſm. Dr Middleton has given a fine diſcourſe on the conformity between the Pagan and Popiſh ceremonies, which he exemplifies in the uſe of incenſe, holy water, lamps, and candles, before the ſhrines of ſaints, votive gifts or offerings round the ſhrines of the deceaſed, &c. In effect, the altars, images, croſſes, proceſſions, miracles, and legends; nay, even the very hierarchy, pontificate, religious orders, &c. of the preſent Romans, he ſhows, are all copied from their heathen anceſtors.—We have an ample and magnificent account of the religious ceremonies and cuſtoms of all nations in the world, repreſented in figures deſigned by Picart, with hiſtorical explanations, and many curious diſſertations.

Maſter of the CEREMONIES, an officer inſtituted by King James I. for the more honourable reception of ambaſſadors and ſtrangers of quality. He wears about his neck a chain of gold, with a medal under the crown of Great Britain, having on one ſide an emblem of peace, with this motto, *Beati pacifici*; and on the other, an emblem of war, with *Dieu et mon droit*; his ſalary is 300l. per annum.

Aſſiſtant Maſter of the CEREMONIES, is to execute the employment in all points, whenſoever the maſter of the ceremonies is abſent. His ſalary is 141l. 13s. 4d. per annum.

Marſhal of the CEREMONIES is their officer, being ſubordinate to them both. His ſalary is 100l. per annum.

CERENZA, town of Italy in the kingdom of Naples, and in the Hither Calabria, with a biſhop's ſee. It is ſeated on a rock, in E. Long. 17. 5. N. Lat. 39. 23.

CERES, a pagan deity, the inventor or goddeſs of corn; in like manner as Bacchus was of wine.

According to the poets, ſhe was the daughter of Saturn and Ops, and the mother of Proſerpine, whom ſhe had by Jupiter. Pluto having ſtolen away Proſerpine, Ceres travelled all over the world in queſt of her daughter, by the help of a torch, which ſhe had lighted in Mount Ætna.

As Ceres was thus travelling in ſearch of her daughter, ſhe came to Celeus king of Eleuſis, and undertook to bring up his infant ſon Triptolemus. Being deſirous to render her charge immortal, ſhe fed him in the day time with divine milk, and in the night covered him with fire. Celeus obſerving an unuſual improvement in his ſon, reſolved to watch his nurſe,

to

Ceret ‖ Cerinthians.

to which end he hid himſelf in that part of the houſe where ſhe uſed to cover the child with fire: but when he ſaw her put the infant under the embers, he cried out and diſcovered himſelf. Ceres puniſhed the curioſity and indiſcretion of the father with death. Afterwards ſhe taught the youth the art of ſowing corn and other fruits, and mounted him in a chariot drawn by winged dragons, that he might traverſe the world, and teach mankind the uſe of corn and fruits. After this, having diſcovered, by means of the nymph Arethuſa, that Proſerpine was in the infernal regions, ſhe applied to Jupiter, and obtained of him that Proſerpine ſhould be reſtored, on condition that ſhe had taſted nothing during her ſtay in that place: but it being diſcovered, by the information of Aſcalaphus, that, as ſhe was walking in Pluto's orchard, ſhe had gathered an apple, and had taſted of ſome of the ſeeds, ſhe was for ever forbidden to return. Ceres, out of revenge, turned Aſcalaphus into an owl. At length, Jupiter, to mitigate her grief, permitted that Proſerpine ſhould paſs one half of the year in the infernal regions with Pluto, and the other half with her mother on earth.

Cicero ſpeaks of a temple of Ceres at Catanea in Sicily, where was a very ancient ſtatue of that goddeſs, but entirely concealed from the ſight of men, every thing being performed by matrons and virgins.

CERET, a town of France in Rouſſillon, with a magnificent bridge of a ſingle arch. It is ſeated near the river Tec, in E. Long. 2. 46. N. Lat. 42. 23.

CEREUS, in *Botany*. See CACTUS.

CERIGO, an iſland in the Archipelago, anciently called *Cytherea*; noted for being the birth-place of Helen, and, as the poets ſay, of Venus. At preſent there is nothing very delightful in the place; for the country is mountainous, and the ſoil dry. It abounds in hares, quails, turtle, and excellent falcons. It is about 50 miles in circumference, and had formerly good towns; but there is now none remaining but that which gives name to the iſland. This is ſtrong both by art and nature, it being ſeated on a craggy rock. The inhabitants are Greek Chriſtians, and ſubject to the Venetians, who keep a governor there, whom they change every two years.

CERINES, a town in the iſland of Cyprus, with a good caſtle, a harbour, and a biſhop's ſee. E. Long. 33. 35. N. Lat. 35. 22.

CERINTHE, HONEYWORT. See BOTANY *Index*.

CERINTHIANS, ancient heretics, who denied the deity of Jeſus Chriſt.—They took their name from Cerinthus, one of the firſt hereſiarchs in the church, being contemporary with St John. See CERINTHUS.

They believed that Jeſus Chriſt was a mere man, born of Joſeph and Mary; but that, in his baptiſm, a celeſtial virtue deſcended on him in form of a dove; by means whereof he was conſecrated by the Holy Spirit, and made Chriſt. It was by means of this celeſtial virtue, therefore, that he wrought ſo many miracles; which, as he received it from heaven, quitted him after his paſſion, and returned to the place whence it came; ſo that Jeſus, whom they called a *pure man*, really died and roſe again; but that Chriſt, who was diſtinguiſhed from Jeſus, did not ſuffer at all. It was partly to refute this ſect that St John wrote his goſpel. They received the goſpel of St Matthew, to countenance their doctrine of circumciſion, form Chriſt's being circumciſed; but they omitted the genealogy. They diſcarded the epiſtles of St Paul, becauſe that apoſtle held circumciſion aboliſhed.

Cerinthus ‖ Certificate.

CERINTHUS, a hereſiarch, cotemporary with the apoſtles, aſcribed the creation not to God, but to angels. He taught that Jeſus Chriſt was the ſon of Joſeph, and that circumciſion ought to be retained under the goſpel. He is looked upon as the head of the converted Jews, who raiſed in the church of Antioch the tumult of which St Luke has given the hiſtory in the 15th chapter of the Acts. Some authors aſcribe the book of the Apocalypſe to Cerinthus; adding, that he put it off under the name of St John, the better to authoriſe his reveries touching Chriſt's reign upon earth: and it is even certain that he publiſhed ſome works of this kind under the title of *Apocalypſe*. See APOCALYPSE.

CEROPEGIA. See BOTANY *Index*.

CERTHIA, in *Ornithology*, the CREEPER or OX-EYE, a genus belonging to the order of picæ. See ORNITHOLOGY *Index*.

CERTIFICATE, *Trial by*, in the law of England, a ſpecies of trial allowed in ſuch caſes where the evidence of the perſon certifying is the only proper criterion of the point in diſpute *. For when the fact in queſtion lies out of the cognizance of the court, the judges muſt rely on the ſolemn averment or information of perſons in ſuch a ſtation as affords them the moſt clear and competent knowledge of the truth. As therefore ſuch evidence, if given to a jury, muſt have been concluſive, the law, to ſave trouble and circuity, permits the fact to be determined upon ſuch certificate merely. Thus, 1. If the iſſue be whether A was abſent with the king in his army out of the realm in time of war, this ſhall be tried by the certificate of the mareſchal of the king's hoſt in writing under his ſeal, which ſhall be ſent to the juſtices. 2. If, in order to avoid an outlawry, or the like, it was alleged that the defendant was in priſon, *ultra mare*, at Bourdeaux, or in the ſervice of the mayor of Bourdeaux, this ſhould have been tried by the certificate of the mayor, and the like of the captain of Calais. But when this was law, thoſe towns were under the dominion of the crown of England. And therefore, by a parity of reaſon, it ſhould now hold, that in ſimilar caſes ariſing at Jamaica or Minorca, the trial ſhould be by certificate from the governor of thoſe iſlands. We alſo find that the certificate of the queen's meſſengers, ſent to ſummon home a peereſs of the realm, was formerly held a ſufficient trial of the contempt in refuſing to obey ſuch ſummons. 3. For matters within the realm; the cuſtoms of the city of London ſhall be tried by the certificate of the mayor and aldermen, certified by the mouth of their recorder, upon a ſurmiſe from the party alleging it, that the cuſtom ought to be thus tried; elſe it muſt be tried by the country: As, the cuſtom of diſtributing the effects of freemen deceaſed; of enrolling apprentices, or that he who is free of one trade may uſe another; if any of theſe, or other ſimilar points come in iſſue. 4. The trial of all cuſtoms and practice of the courts ſhall be by certificate from the proper officers of thoſe courts reſpectively; and

* See *Trial*.

Blackſt. Comment.

Certiorari || Cervical Veſſel.

and when return was made on a writ by the ſheriff or under ſheriff, ſhall be only tried by his own certificate.

CERTIORARI, in *Law*, a writ which iſſues out of the chancery, directed to an inferior court, to call up the records of a cauſe there depending, in order that juſtice may be done. And this writ is obtained upon complaint, that the party who ſeeks it has received hard uſage, or is not like to have an impartial trial in the inferior court. A certiorari is made returnable either in the king's bench, common pleas, or in chancery.

It is not only uſed out of the court of chancery, but likewiſe out of the king's bench; in which laſt mentioned court it lies where the king would be certified of a record. Indictments from inferior courts, and proceedings of the quarter ſeſſions of the peace, may alſo be removed into the king's bench by a certiorari: and here the very record muſt be returned, and not a tranſcript of it; though uſually in chancery, if a certiorari be returnable there, it removes only the tenor of the record.

CERTITUDE, conſidered in the things or ideas which are the objects of our underſtanding, is a neceſſary agreement or diſagreement of one part of our knowledge with another: as applied to the mind, it is the perception of ſuch agreement or diſagreement; or ſuch a firm well-grounded aſſent, as excludes not only all manner of doubt, but all conceivable poſſibility of a miſtake.

There are three ſorts of certitude, or aſſurance, according to the different natures and circumſtances of things. 1. A phyſical or natural certitude, which depends upon the evidence of ſenſe; as that I ſee ſuch or ſuch a colour, or hear ſuch or ſuch a ſound; nobody queſtions the truth of this, where the organs, the medium, and the object, are rightly diſpoſed. 2. Mathematical certitude, is that ariſing from mathematical evidence; ſuch as, that the three angles of a triangle are equal to two right ones. 3. Moral certitude is that founded on moral evidence, and is frequently equivalent to a mathematical one; as that there was formerly ſuch an emperor as Julius Cæſar, and that he wrote the commentaries which paſs under his name; becauſe the hiſtorians of theſe times have recorded it, and no man has ever diſproved it ſince: this affords a moral certitude, in common ſenſe ſo great, that one would be thought a fool or a madman for denying it.

CERTOSA, a celebrated Carthuſian monaſtery; in the territory of the Paveſe, in the duchy of Milan, four miles from Pavia: its park is ſurrounded with a wall 20 miles in circumference; but there are ſeveral ſmall towns and villages therein.

CERVANTES. See SAAVEDRA.

CERVERA, a town of Spain in Catalonia, ſeated on a ſmall river of the ſame name, in E. Long. 1. 9. N. Lat. 41. 28.

CERVIA, a ſea port town of Italy, in Romagna, with a biſhop's ſee, ſeated on the gulf of Venice, in E. Long. 13. 5. N. Lat. 44. 16.

CERVICAL NERVES, are ſeven pair of nerves, ſo called, as having their origin in the *cervix*, or neck.

CERVICAL Veſſels, among anatomiſts, denote the arteries, veins, &c. which paſs through the *vertebræ* and muſcles of the neck up to the ſkull.

CERVIX, in *Anatomy*, properly denotes the hind part of the neck; as contradiſtinguiſhed from the fore part, which is called *jugulum*, or the throat. Cervix || Ceſare.

CERVIX of the *Scapula*, denotes the head of the ſhoulder olade, or that upper proceſs whoſe *ſinus* receives the head of the *humerus*,

CERVIX *of the Uterus*, the neck of the *uterus*, or that oblong canal or paſſage between the internal and external orifices, which receives and encloſes the *penis* like a ſheath, whence it is alſo called VAGINA.

CERUMEN, a thick, viſcous, bitter, excrementitious humour, ſeparated from the blood by proper glands placed in the *meatus auditorius*, or outer paſſage of the ear.

CERUSS, WHITE LEAD, a ſort of calx of lead, made by expoſing plates of that metal to the vapour of vinegar. See CHEMISTRY *Index*.

Ceruſs, as a medicine, is uſed externally either mixed in ointments, or by ſprinkling it on old gleeting and watery ulcers, and in many diſeaſes of the ſkin. If, when it is reduced into a fine powder, it is received in with the breath in inſpiration, and carried down into the lungs, it cauſes incurable aſthmas. Inſtances of the very pernicious effects of this metal are too often ſeen among thoſe perſons who work lead in any form, but particularly among the workers in white lead.

The painters uſe it in great quantities; and that it may be afforded cheap to them, it is generally adulterated with common whiting.

CERVUS, or DEER, in *Zoology*, a genus of quadrupeds belonging to the order of Pecora. See MAMMALIA *Index*.

CERVUS Volans, in *Natural Hiſtory*, a name given by authors to the ſtag-fly, or horned beetle, a very large ſpecies of beetle with horns ſloped, and ſomething like thoſe of the ſtag.

CERYX, in antiquity. The ceryces were a ſort of public criers appointed to proclaim or publiſh things aloud in aſſemblies. The *ceryx* among the Greeks anſwered to the *præco* among the Romans. Our criers have only a ſmall part of their office and authority.

There were two kinds of ceryces, *civil* and *ſacred*. The former were thoſe appointed to call aſſemblies, and make ſilence therein; alſo to go on meſſages, and do the office of our heralds, &c. The ſacred ceryces were a ſort of prieſts, whoſe office was to proclaim ſilence in the public games and ſacrifices, publiſh the names of the conquerors, proclaim feaſts, and the like. The prieſthood of the ceryces was annexed to a particular family, the deſcendants of Ceryx, ſon of Eumolpus. To them it alſo belonged to lead ſolemn victims to ſlaughter. Before the ceremonies began, they called ſilence in the aſſembly, by the formula, Ευφημειτε σιγατε πας εςω λαως; anſwering to the *favete linguis* of the Romans. When the ſervice was over, they diſmiſſed the people with this formula, Λαων αφεσις, *Ite miſſa eſt*.

CESARE, among logicians, one of the modes of the ſecond figure of ſyllogiſms; the minor propoſition of which is an univerſal affirmative, and the other two univerſal negatives: thus,

CE No immoral books ought to be read;
SA But every obſcene book is immoral;
RE Therefore no obſcene books ought to be read.

CECENA,

Ceſena || Ceſſion.

CESENA, a town of Romagna in Italy, with a biſhop's ſee, ſubject to the pope, and ſeated on the river Savio, in E. Long. 12. 46. N. Lat. 44. 8.

CESPITOSÆ PLANTÆ (from *ceſpes*, turf or ſod), are thoſe plants which produce many ſtems from one root, and thence form a cloſe thick carpet on the ſurface of the earth.

Cespitosæ Paludes, turf-bogs.

CESSATION, the act of intermitting, diſcontinuing, or interrupting, the courſe of any thing, work, action, or the like.

Cessation of Arms, an armiſtice or occaſional truce. See TRUCE.

When the commander of a place finds things reduced to an extremity, ſo that he muſt either ſurrender, or ſacrifice the garriſon and inhabitants to the mercy of the enemy, he plants a white flag on the breach, or beats the chamade; on which a ceſſation of arms and hoſtilities commences, to give room for a capitulation.

CESSIO BONORUM, in *Scots Law*, the name of that action by which an inſolvent debtor may apply for liberation from priſon, upon making over his whole real and perſonal eſtate to his creditors.

CESSION, in *Law*, an act by which a perſon ſurrenders and tranſmits to another perſon a right which belonged to himſelf. Ceſſion is more particularly uſed in the civil law for a voluntary ſurrender of a perſon's effects to his creditors to avoid impriſonment. See the article BANKRUPT.

In ſeveral places the ceſſion carried with it a mark of infamy, and obliged the perſon to wear a green cap or bonnet: at Lucca, an orange one; to neglect this was to forfeit the privileges of the *ceſſion*. This was originally intended to ſignify that the ceſſionary was become poor through his own folly. The Italian lawyers deſcribe the ceremony of ceſſion to conſiſt in ſtriking the bare breech three times againſt a ſtone, called *Lapis Vituperii*, in preſence of the judge. Formerly it conſiſted in giving up the girdles and keys in court: the ancients uſing to carry at their girdles the chief utenſils wherewith they got their living; as the ſcrivener his eſcritoire, the merchant his bag, &c. The form of ceſſion among the ancient Gauls and Romans was as follows: The ceſſionary gathered up duſt in his left hand from the four corners of the houſe, and ſtanding on the threſhold, holding the door-poſt in his right hand, threw the duſt back over his ſhoulders; then ſtripping to his ſhirt, and quitting his girdle and bags, he jumped with a pole over a hedge; hereby letting the world know that he had nothing left, and that when he jumped, all he was worth was in the air with him. This was the ceſſion in criminal matters. In civil caſes, it was ſufficient to lay a broom, a ſwitch, or a broken ſtraw, on the threſhold: this was called *chrenecruda per durpillum et feſtucam.* Ceſſion || Ceterach.

CESSION, in the eccleſiaſtical law, is when an eccleſiaſtical perſon is created a biſhop, or when a parſon of a pariſh takes another benefice, without diſpenſation, or being otherwiſe qualified. In both theſe caſes their firſt benefices became void by ceſſion, without any reſignation; and to thoſe livings that the perſon had, who was created biſhop, the king may preſent for that time, whoſoever is patron of them; and in the other caſe the patron may preſent: but by diſpenſation of retainder, a biſhop may retain ſome or all the preferments he was entitled to before he was made biſhop.

CESTRUM, BASTARD JASMINE. See BOTANY *Index*.

CESTUI, a French word, ſignifying *he* or *him*, frequently uſed in the Engliſh law writings. Thus, *Ceſtui qui truſt*, a perſon who has lands, &c. committed to him for the benefit of another; and if ſuch perſon does not perform his truſt, he is compellable to it in chancery. *Ceſtui qui vie*, one for whoſe life any lands, &c. are granted. *Ceſtui qui uſe*, a perſon to whoſe uſe any one is infeoffed of lands or tenements. Formerly the feoffees to uſes were deemed owners of the land, but now the poſſeſſion is adjudged *in ceſtui qui uſe*.

CESTUS, among ancient poets, a fine embroidered girdle ſaid to be worn by Venus, to which Homer aſcribes the power of charming and conciliating love. The word is alſo written *ceſtum* and *ceſton*: it comes from κεστος, *a girdle*, or other thing embroidered or wrought with a needle; derived, according to Servius, from κεντειν, *pungere*; whence alſo *inceſtus*, a term uſed at firſt for any indecency by undoing the girdle, &c. but now reſtrained to that between perſons near a-kin. See INCEST.

CETACEOUS, an appellation given to the fiſhes of the whale kind. See CETOLOGY.

CETE, the name of Linnæus's ſeventh order of mammalia, comprehending the MONODON, BALÆNA, PHYSETER, and DELPHINUS. See CETOLOGY.

CETERACH, the trivial name of a ſpecies of ASPLENIUM. See ASPLENIUM, BOTANY *Index*.

CETOLOGY.

1 Definition of the title.

UNDER this general title is comprehended the hiſtory of that diviſion of marine animals, which in the Linnæan arrangement conſtitutes the ſeventh order of the claſs mammalia. This is the order *cete* or *whales*. Ray and Willoughby have included this order of animals under the claſs of fiſhes. Ray, in his arrangement of fiſhes, divides them into two principal ſections. The one comprehends thoſe fiſhes which are furniſhed with lungs for reſpiration; and the other, thoſe which breathe by means of gills, and may be conſidered as truly fiſhes. In the former ſection are included the cetaceous fiſhes; and the reaſons which he aſſigns for arranging them in this manner are, that they agree in external form with fiſhes; that they are entirely naked, or covered only with a ſmooth ſkin; and that they live entirely in the water, and have all the actions of fiſhes. Although this tribe of animals reſembles fiſhes, not only in manners and habits, but alſo in being inhabitants of the ſame element, Linnæus thought proper to claſs them with the mammalia, on

2 Arrangement of fiſhes by Ray.

3 Of whales by Linnæus,

Introduction. on account of the similarity of their internal structure, having a double heart and warm blood, and respiring like them by means of lungs.

4 by Pennant. Mr Pennant, in his British Zoology, has objected to the classification of cetaceous animals with the mammalia, as Linnæus has done, because, "to have preserved the chain of beings entire, he says that Linnæus should have made the genus *phocæ* or *seals*, and that of the *trichecus* or *manati*, immediately precede the whale, those being the links that connect the mammalia or quadrupeds with the fish; for the seal is in respect to its legs the most imperfect of the former class; and in the *manati* the hind feet coalesce, assuming the form of a broad horizontal tail." On this account, Mr Pennant has arranged the cetaceous order of animals under his class of fishes, including them under the first

5 Treated of separately. division of that class. For the same reasons we have separated them from the class of fishes; but although they resemble the quadrupeds, which compose chiefly the class mammalia, in being warm blooded, and in the functions of circulation and respiration; yet, as they possess characters so totally distinct from any of the mammalia, we judged it more natural to separate them also from this class, and to treat of them in the

6 Their history important, present article. This tribe of animals is also entitled to a separate treatise, both on account of the interest to be derived from their natural history, and on account of their importance in a commercial view.

7 but deficient. The history of cetaceous animals, as well as that of the other inhabitants of the ocean, cannot be expected to be complete. They are beyond the reach of the naturalist, from the nature of the element in which they live; and even when he is favoured with a transient glimpse, the rapidity of their motions precludes the possibility of obtaining much accurate knowledge of their manners and habits. But the abode of the

8 Reasons. whale is the most inaccessible parts of the ocean. The frozen regions of the north and south are his chief retreat—regions so inhospitable, as to forbid the approach of the most hardy naturalist with all his zeal and ardour, and to be visited only by the adventurous fisherman, prompted by the hope of gain. To the latter, chiefly, we are indebted for what knowledge we possess of this tribe of animals. And from men who had a very different object in view, who, in this hazardous trade, had to struggle with the severest seasons, in a climate where the rigour of winter rarely

9 Sources of information. relaxes, information on this subject could neither be accurate nor extensive. This, however, was the principal source, from which the earlier writers on this department of natural history derived their information. Such were Sibbald, Martens, Dudley, Klein, and Anderson, who composed their descriptions from the relations and memoirs which were communicated to them by fishermen and voyagers. Hence have originated those erroneous and inaccurate details which have been introduced into the works of naturalists.

10 Name limited. The name of *Cete*, as the word which is derived from the Greek language originally signifies, was given indiscriminately to all marine animals of extraordinary size. It has been limited by later naturalists to that tribe of fishes which are distinguished from other fishes by the functions of respiration and circulation, and by being viviparous. These are now included under the general term *cetaceous* fishes. Beside the discriminative marks of respiration, circulation, and being viviparous, others may be mentioned. In the cetaceous fishes the skin is not covered with scales as in other fishes; there are one or two orifices in the upper part of the head for discharging water; the lateral fins are furnished with articulations as in the human hand, and the tail is horizontal. There is another remarkable difference between the cetaceous and other fishes, in the greater quantity of blood, and the thick covering of fat or *blubber*, for which the former are distinguished. And considering the temperature of the climate, and the element in which these animals live; this seems to be a wise and necessary provision of nature. The great quantity of blood produces a greater degree of heat, and the spongy porous mass of blubber, being from its nature a slow conductor of heat, is an excellent defence against the rigour of the seasons in the polar regions.

Classification, &c. 11 Different from other fishes 12 in fat 13 and quantity of blood.

In the following treatise, we propose to lay before our readers, 1st, The Classification and Natural History of Cetaceous Fishes 2d, Their Anatomy and Physiology. And lastly, the History of the Whale Fishery as an object of trade. These shall be the subjects of three Chapters.

Chap. I. *Of the Classification and Natural History of Cetaceous Fishes.*

14 Classes four. Cetaceous fishes have been divided into four classes, the characters of which are taken from the want of teeth, from the structure of the teeth, and from their position in one or both jaws. The following table exhibits the characters of these classes, with a translation opposite for the sake of the English reader.

1st, Balæna, or *Whale.*

Dentium loco laminæ corneæ in maxilla superiore.	In place of teeth there are horny plates in the upper jaw.

2d, Monodon, or *Unicorn Fish.*

Dens unicus aut duo in parte antica maxillæ superioris horizontaliter exserti.	One or two teeth horizontally inserted in the anterior part of the upper jaw.

3d, Physeter, or *Spermaceti Whale.*

Dentes veri in maxilla inferiore; aliquot vero plani, vix conspicui in maxilla superiore.	Teeth in the lower jaw, but scarcely conspicuous in the upper jaw.

4th, Delphinus, or *Dolphin.*

Dentes in utraque maxilla.	Teeth in both jaws.

15 Genera. Each of the four classes which we have now enumerated and characterized, comprehends only a single genus, the characters of which are as follows:

Generic Characters.

1st Genus, Balæna or *Whale.*

Maxilla superior dentium loco, laminis corneis instructa; fistula duplex in vertice.	The upper jaw is furnished with horny plates in place of teeth; and there are two blow-holes on the top of the head.

Classification, &c.

2d Genus, MONODON, or *Unicorn Fiſh.*

Dens unicus aut duo, longi aut breves, recti vel recurvi, in parte antica maxillæ ſuperioris exſerti; fiſtula in occipite.	In the anterior part of the upper jaw there is one or two teeth which are either ſtraight or curved, long or ſhort; the ſpout in the back part of the head.

3d Genus, PHYSETER, or *Spermaceti Whale.*

Dentes veri et viſibiles in maxilla inferiore, in quibuſdam vero maxilla ſuperior dentibus planis vix conſpicuis inſtructa; fiſtula in angulo ſuperiore roſtri.	The teeth diſtinctly ſeen in the lower jaw, but ſcarcely viſible in the upper jaw; the ſpout in the upper part of the forehead.

4th Genus, DELPHINUS, or *Dolphin.*

Maxilla utraque dentata; fiſtula in fronte.	Both jaws are furniſhed with teeth; the ſpout in the forehead.

CLASS I. BALÆNA.

Genus 1ſt, BALÆNA, or *Whale.*

16 Generic characters. The body is naked, elliptical, or of an oblong conical ſhape, and of a black or browniſh colour.

The head is very long, laterally compreſſed, and diminiſhing towards the beak. The opening of the mouth is very large. The jaws are nearly equal, and without teeth; but in place of teeth, the upper jaw is furniſhed on both ſides with horny plates, tranſverſely diſpoſed. The lower jaw is anteriorly of an oval or roundiſh form, broader than the upper jaw, and having a furrow on the margin for receiving the horny plates. The eyes are ſmall; they are placed near the inſertion of the lateral fins. The ears are alſo ſmall, and are ſituated behind the eyes.

In ſome of the ſpecies the anterior part of the body is plicated or folded underneath.

The penis is encloſed in a ſheath. The female is furniſhed with two mammæ; and the organs of generation are placed between them. Behind them is the anus.

There are three or four fins; two lateral fins, one at the extremity of the tail, which is placed horizontally. The dorſal fin is often wanting.

** Species which have no Dorſal Fin.*

Plate CXL. fig. 1. 1. BALÆNA MYSTICETUS, the *Greenland*, or *large Whalebone Whale.*

French, *Baleine-Franche, Baleine de grande baie;* Spaniards, *Vallena; Whallffeſch*, by the Germans; *Whallviſek*, Dutch; *Hvafiſch, Sletback*, by the Norwegians; *Hvalfiſk*, by the Swedes; *Slitchteback, Sandhual*, by the Danes; *Vatuſkalr*, by the Icelanders; and *Arbek, Arbavirkſoak*, by the Greenlanders.

17 Characters. In this ſpecies the jaws are nearly of equal length; the lower is of an oval form, and broad in the middle; the back is ſpotted, black and white.

18 Deſcription. This is the largeſt of animals known. The body, from a ſide-view, appears of an elliptical form. The head is very nearly equal to one third of the whole length of the body. It is as it were compoſed of two inclined planes joined together under a larger or ſmaller angle, has ſomething the appearance of the roof of a ſmall houſe.

Claſſification, &c.

19 Blow-holes. In the middle of the line formed by the junction of the two inclined planes, there riſes a large tubercle, in which are ſituated the ſpouts or blow-holes oppoſite to each other, and curved in the ſhape of the letter S. The jaws are nearly equal in length; the lower is broader towards the middle of its length than the upper; and beſides, it ſpreads out and has membranous coverings, which terminate in a broad deep furrow, which is deſtined to receive the horny teeth of the upper jaw. When the jaws are cloſe, the opening of the mouth folds upwards towards the orbit of the eyes, and exhibits by its inflection, the curved form of a ſickle.

20 Whalebone. The want of teeth is ſupplied by about 500 horny laminæ. This is the ſubſtance called *whalebone*. They are attached to the upper jaw on both ſides, and ſupported at the baſe by a kind of bone which extends the whole length of the roof of the mouth. They are arranged tranſverſely, and in an oblique direction. Each of them is from three to five feet long, is thickeſt at the baſe, tapers towards the point, is a little curved, and terminates in a fringe of long hair which hangs about the tongue. Towards the two extremities of each row, there are beſides many other ſmall laminæ, which are of a ſquare form, of the thickneſs of a writing quill, and about four inches long. Theſe latter are arranged in the ſame direction as the former; but are of a ſofter ſubſtance, and do not come ſo cloſe to each other.

21 Tongue. The tongue is ſoft and ſpongy, ſtrongly attached to the lower jaw, and rounded at the extremity. On the upper ſide it is white, but on the ſides it is marked with black ſpots. It is often 10 feet broad and 18 feet long.

22 Eyes. The eyes are placed very low, at the broadeſt part of the head, juſt above the angles of the mouth, and very near the origin of the lateral fins. They are furniſhed, as the means of defence, with eyelids and eyelaſhes; and reſemble in form and magnitude thoſe of an ox. The cryſtalline lens, which is white and tranſparent, is not larger than a pea.

23 Ear. The external organ of hearing, conſiſts of a ſmall hole of the diameter of a quill, which is placed immediately behind the eyes.

The back forms a gentle curvature from the tubercle on the top of the head; towards the middle of the trunk it is again elevated, and then tapers gradually to the tail. The lower part of the body diminiſhes in the ſame proportion.

24 Fins. The lateral fins have their origin near the angle of the mouth. They are two large thick maſſes, of an oval irregular form, and are often 10 feet long. The tail fin is divided into two oval fleſhy lobes, which terminate in a point.

The male is furniſhed with a penis which is eight feet long, and ſurrounded with a double ſkin, which gives it ſomething of the appearance of a knife in its ſheath. The female has two mammæ, which are placed on each ſide of the organs of generation.

25 Skin. The ſkin of the whale is divided into the epidermis or ſcarf-ſkin, the true ſkin, the fat or blubber, and the muſcle or fleſh. The epidermis is as thin as parchment,

Claſſification, &c.

ment, and very eaſily ſeparated, when the proceſs of putrefaction firſt commences. The true ſkin is an inch thick, and covers a layer of fat of 15 inches.

26 Colour.

The back of the whale is uſually of a fine black, marked with whitiſh rays, which have ſome reſemblance to the veins of wood; and in the thickeſt, as well as the fineſt of theſe traces, there paſs other veins of a dirty white. This mixture of colours preſents an agreeable appearance, eſpecially when the back of the fiſh is illuminated with the rays of the ſun. The different changes of colour from white to yellow then exhibit the ſplendour and brilliancy of ſilver.

The under part of the trunk, and of the lower jaw, is of a bright white. But theſe colours are ſubject to conſiderable variation, according to the age of the fiſh. Some have been obſerved to be entirely black; others ſpotted with white, yellow, and brown. Martens aſſures us, that he obſerved on the tail of a whale, the number 1222, as neatly traced, as if it had been executed by the hand of a painter. But probably the reſemblance to theſe figures was helped out by the aid of fancy.

Ellis and ſome other naturaliſts aſſert, that the whale is found perfectly white in the weſtern parts of the northern ocean. It is not uncommon to ſee the young whale ſpotted with brown; and old whales marked on the back with a tranſverſe band, which extends to the belly. Sometimes, however, the ſpots obſerved on the whale, have been undoubtedly occaſioned by wounds; for it is certain, that a white ſcar always remains on the place which has been wounded.

27 Size.

The ſize of the whale has not been very accurately aſcertained. Some have been taken of 80, and even of 100 feet long, and almoſt as much in circumference. The female is in general larger than the male. The period of pregnancy is nine or ten months; and one, very rarely two, is brought forth at a time. The young whale is 20 feet long at birth.

28 Haunts.

This ſpecies of whale is very common towards the north pole, in the ſeas of Greenland and Spitzbergen, and eſpecially in that part of the arctic ſea, which lies under the 76th degree of latitude.

29 Food.

The principal food of the whale is a ſpecies of *helix* and different ſpecies of actinia. It is not a little ſurpriſing that the whale of ſuch immenſe ſize, ſhould feed on ſuch ſmall animals, and ſhould acquire ſuch a quantity of fat as to yield above 150 tons of oil. But according to the teſtimony of thoſe employed in the whale fiſhery, theſe worms are found in ſuch abundance in the ſeas about Spitzbergen, that the whale has only to open his mouth to receive thouſands at once, and then rejecting the water through the fringe or beard attached to the jaws, theſe little animals remain behind, taken as it were in a net. And indeed, there ſeems to be a wiſe proviſion of nature for the ſubſiſtence of this monſtrous animal, in impreſſing on theſe worms and inſects, which are to be his food, a kind of inſtinct, which guides them to ſport about the fringes of the jaws, in the very gulf which is to ſwallow them up. Linnæus ſays that the whale alſo feeds on *meduſæ*. But to this it has been objected, that the meduſæ are not in ſufficient abundance in the northern ſeas, to furniſh the neceſſary quantity of food for ſo large an animal. It ſeems not improbable, however, that the meduſæ as well as the actiniæ may form part of its food. Claſſification, &c.

The excrement of the whale has ſome degree of ſolidity, and it is of a yellow colour approaching ſomewhat to the colour of ſaffron.

30 Fiſhery by the Greenlanders.

The whale fiſhery, or rather it might be termed the chaſe of the whale, conſtitutes one of the principal occupations of the inhabitants of Greenland. The capture of a ſingle whale is ſufficient for the ſubſiſtence of a whole family for a long time. The fleſh is eaten raw, baked, or after being half rotten, or dried in the heat of the ſun; and according to Horrebow, it has a very good taſte. The ſkin, the tail, and the fins, undergo no kind of preparation; for it ſeems theſe parts furniſh in the raw ſtate, a very delicate morſel to the Greenlanders. The fat is either eaten, or burnt for the purpoſe of giving light. The inteſtines are employed to ſhut up the doors and windows of their habitations; and the tendons furniſh thread for ſewing, or for the conſtruction of nets. Of the bones the Greenlanders make ſtools or chairs, and inſtruments that are uſed in hunting and fiſhing. The beſt lines are made of the hair that terminates the horny plates of the upper jaw. 31 Uſes.

The following are the dimenſions of a whale taken towards the north pole, and recorded by M. de Pages in the account of his voyage round the world.

	Feet.	Inches.
Total length,	48	0
Circumference of the head, which is the thickeſt part of the body,	26	0
Length of the head about	18	0
Length of the jaw-bones,	18	0
Diameter of the orbit of the eyes,	0	3
Opening of the eye-lids,	0	5
Diſtance of the eyes from the opening of the breathing holes,	6	0
Length of the cavity which includes the penis,	4	0
Depth of this cavity,	0	8
Diſtance of this cavity from the anus,	1	0
Diameter of each mamma,	0	6
Length of the papilla,	0	2
Diameter of it,	0	1½
Diſtance of the two lobes of the tail fin, about	17	0
Depth of the hollow which ſeparates the two lobes,	2	6
Length of the lateral fins,	8	0
Breadth of the ſame, about	7	0

2. Balæna Glacialis, *Iceland Whale.*

French, *Le Nord Caper*, *Baleine de Sarde*. German *Nordkaper*. Norwegian, *Sildqual*, *Nordkaper*.

32 Specific characters.

In this ſpecies, the jaws are nearly of equal length. The under jaw is rounded, and broader towards the middle of its length. There is no dorſal fin. The back is whitiſh.

33 Body.

The Iceland whale differs from the former only in the colour and dimenſions of the body. The head and horny laminæ of the upper jaw are much ſmaller. The trunk of the body is more ſlender, and is of a light

Claſſification, &c. light brown colour. It has been obſerved, that the lower jaw of this ſpecies is more elongated, and rounder than that of the common whale.

34 Mode of taking by the Icelanders. As it is very dangerous to harpoon this ſpecies of whale, on account of its extreme agility, it is mentioned by Anderſon, that the Icelanders have a very ingenious method of taking it. When they perceive the whale in chaſe of the herrings, they inſtantly launch their canoes furniſhed with harpoons, ſpears, and knives, and endeavour to get between the whale and ocean. They continue the purſuit by rowing, and approach as near as poſſible. If the wind blow towards the ſhore, they pour on the ſea, a quantity of blood, with which they are always provided, and as it is carried by the waves to the coaſt, they endeavour to direct it as near to the ſhore as they can. The whale perceiving himſelf purſued attempts to regain the ocean, but when he approaches the blood he is alarmed, and rather than ſwim acroſs it, he makes his eſcape to the ſhores, where he often throws himſelf on the rocks. But if the wind blow from the land, the fiſhermen endeavour to get between the whale and the ocean, as in the other caſe; and when he attempts to make for the deep, they throw ſtones from their canoes, and ſhout and make a noiſe, ſo that the whale is terrified and is driven on ſhore. This, however, is contradicted by Horrebow, who remained two years in Iceland, and had good opportunities of being well informed of every thing relating to the whale fiſhery. He ſays, that the Icelanders are neither hardy enough to make this hazardous attempt, nor ſo fortunate or dexterous as to take the whale ſo eaſily. The only method which is practiſed there, he ſays, is the following. When the boat approaches the whale, the harpooner diſcharges his harpoon, and the boat inſtantly retreats. The harpoon is known by having the mark of the proprietor, and when the whale has been ſucceſsfully wounded, he dies and is thrown aſhore. A certain portion belongs to the perſon who was ſo fortunate as to inflict the wound, and the remainder is claimed, according to a law of the country, as the right of the perſon on whoſe property he lands. According to this author, this is the whole art practiſed by the inhabitants of Iceland in the whale fiſhery.

The Iceland whale yields only from 10 to 30 tons of blubber.—The food of this whale conſiſts of ſome ſpecies of *helix*, *meduſæ*, and herrings.

This whale inhabits the northern ocean, about the coaſts of Norway and Iceland.

Klein has made two varieties of this whale, diſtinguiſhing them by names derived from that part of the ocean where they are found. 1. Var. *Auſtralis*, which is found in the ſouthern ocean, has the back very flat. 2. Var. *Occidentalis*, found in the weſtern ocean, which has the back more elevated. The ſame naturaliſt has diſtinguiſhed the *Balæna glacialis* by the name *borealis*.

** *Species which have a Fin or Bunches on the Back.*

3. Balæna Physalus, or *Fin-fiſh*.

French, *Le Gibbar;* German, *Finnfiſch;* Dutch, *Vinviſch;* Norwegian, *Ror-hual, Finne-fiſk;* Greenland, *Tummilik;* Iceland, *Hunfubaks*.

35 Characters. The jaws are equal and pointed; the horny laminæ of the upper jaw are ſhort, and of a bluiſh colour. There is one fin on the back.

Claſſification, &c.

According to the fiſhermen the fin-fiſh is as long, but not not ſo thick as the common whale. When the jaws are ſhut, the head reſembles a cone, which conſtitutes nearly one third part of the whole length of the whale, and terminates in a ſharp ſnout. On the top of the head are two reſpiratory orifices divided longitudinally. This whale, it is ſaid, ejects the water with much greater force than the common whale. The horny laminæ of the upper jaw are fringed and diſpoſed in the ſame manner as thoſe of the preceding. They differ in being ſhorter, and of a blue colour. The length is from 10 to 12 inches. The long hair which terminates the laminæ, is ſo twiſted that the edges of the upper jaw ſeem covered with a thick cord interwoven together. The eyes are placed very low, nearly in the direction of the angles of the mouth. Towards the poſterior extremity of the back, there ariſes a triangular fin, about 3 or 4 feet high, having the ſummit bent backwards. The lateral fins are of an oval figure, from 6 to 7 feet long. The tail-fin is divided into two lobes which form nearly a right angle. 36 Deſcription.

This ſpecies lives on the herring, the mackerel, a kind of ſalmon frequent in the northern ſea, and other ſmall fiſh. 37 Food.

The upper part of the body is of a ſhining brown colour. The belly and the under part of the lower jaw are of a ſplendid white.

This ſpecies of whale is found in the Greenland ſeas, in the European ſeas, in the Indian ocean, and in the new world. In March 1673, Martens mentions that he ſaw a whale of this ſpecies in the Straits of Gibraltar. As the maſs of the body conſtitutes the third or the fourth of that of the common whale, the fat is leſs thick. It yields, it is ſaid, only ten tons of oil. This whale is therefore leſs an object of the fiſherman's purſuit, for the produce of oil is not equivalent to the expence, the riſk and the danger that attend it.

It has been remarked, that as ſoon as the fin-fiſh makes its appearance in the ſeas round Spitzbergen, the common whale is no longer to be ſeen.

38 Uſes. In Greenland the fleſh, the fins, the ſkin and the tendons, are employed as food by the poorer inhabitants; and the bones are applied to a great many domeſtic uſes. It is ſaid that the fleſh has the ſame taſte as that of the ſturgeon.

4. Balæna Nodosa, the *Bunch* or *Humpback Whale*.

French, *Baleine-tampon;* German, *Plock-fiſh;* Dutch, *Pen-fiſh*.

39 Characters. The lateral fins are white. There is a bunch near the tail larger than the head of a man.

40 Deſcription. Of this ſpecies leſs is known than of the others. In place of the dorſal fin, there is a bunch near the tail which declines poſteriorly. It is about a foot high, and a little thicker than the human head. The lateral fins are white, placed near the middle of the body, and are 18 feet long. The blubber of the bunch-whale reſembles that of the fin-fiſh. According to Klein, the beard of this ſpecies is not held in much eſtimation, though it is more valued than that of the latter ſpecies. It is a native of the ſeas of New England.

Claſſification, &c.

5. Balæna Gibbosa, the *Scrag-whale.*

French, *La Baleine à ſix boſſes;* German, *Knotenfiſch;* Dutch, *Knobbelfiſch.*

41 Characters. The horny laminæ of the upper jaw in this ſpecies are white; and there are ſix bunches on the back.

42 Deſcription In external form this ſpecies reſembles the common whale. It is nearly of the ſame colour, and yields an equal quantity of blubber. It ſeems difficult to reconcile this with the ſpecific name given by Klein, viz. *Balæna macra*, or lean whale. But it has been ſuppoſed that this refers to the muſcular parts, which are of ſmaller ſize.

The dorſal fin is wanting. Its place ſeems to be ſupplied by ſix bunches or knots towards the tail. The laminæ are white, and are found to ſplit with much difficulty.

Like the former, it inhabits the ſeas of New England.

*** *Species which have a Protuberance in form of a Fin on the Tail, and Folds on the Belly.*

6. Balæna Boops, the *Pike-headed Whale.*

French, *La Jubarte;* Greenland, *Keporkak;* Iceland, *Hrafin, Reydus.*

43 Characters. The lower jaw is a little ſhorter and narrower than the upper. The protuberance on the back is curved and ſtretching to the tail.

44 Deſcription M. O. Fabricius, who was preſent and aſſiſted at the capture of a whale of this ſpecies, has given the following deſcription of it. The body is round and very thick near the lateral fins. It gradually diminiſhes to the end of the tail, the thickneſs of which is not greater than what a man can embrace. The head is oblong, inclining, and terminates in a broad obtuſe ſnout. Towards the middle of the head is the protuberance, in the middle of which are the two reſpiratory orifices, which are ſo cloſe to each other, as to appear to be only one. Before the orifices there are three rows of circular protuberances, of which the uſe is not known. The lower jaw is ſhorter and narrower than the upper. The eyes are placed on the ſides of the head behind the orifices. The external opening of the organ of hearing forms two holes immediately behind the orbits of the eyes, but are almoſt imperceptible. The horny laminæ of the upper jaw are black, and ſcarcely a foot in length. They are diſpoſed in the ſame manner as in the common whale, but the interſtices in the fore part of the jaw are not filled up with ſmall laminæ. The tongue is large, fat, and ſpongy; its colour reſembles that of the liver. It is covered with a looſe ſkin, which ſtretches towards the gullet, where it forms a kind of operculum or covering.

The lateral fins are large, oval, interiorly entire, rounded and notched poſteriorly, and a little hollowed externally. The tail fin is hollowed or notched in form of a creſcent, and terminates in a point. From the lower part of the mouth, to the region of the anus, the inferior ſurface of the body is marked with folds or furrows which unite in pairs, and form angles at the two extremities. The two external furrows are always of the greateſt length; and it would appear that the whale has the power of dilating and contracting them at pleaſure.

Claſſification, &c.

The colour of the upper part of the body is black; the lower part of the mouth and the lateral fins are white; the cavity of the furrows is of a blood red; the interior folds, the belly, and the tail fin, are marked with black and white ſpots. Under the epidermis is the ſkin which covers the fat, which in this ſpecies is but a thin layer, and conſequently yields leſs oil than the preceding.

When the pike-headed whale takes in food, it opens its capacious mouth, and ſwallows a great quanty of water along with its prey. It is then that the folds of the ſkin on the belly are obſerved to dilate conſiderably; and then too the contraſt between the fine red in the cavity of the furrows, the black colour of the laminæ of the jaw, and the bright white on the under part of the mouth, produces a very ſtriking effect.

At every attempt at progreſſive motion, this ſpecies ejects the water by the reſpiratory orifices, but with leſs violence than other whales. The moment after, it diſappears under the water. And when it plunges and ſhews the tail-fin, it is conſidered as a ſign that it is going to deſcend to a great depth, and that it will remain a longer time under the ſurface. When the ſea is calm, it is ſeen aſleep on the ſurface of the water; and the moment it awakes, it performs a number of different motions with inconceivable rapidity. Sometimes it lies on its ſide; in an inſtant it ſtrikes the water with the lateral fins with prodigious force, and then turns on its back. It ſprings up into the air, and returns to the water in a whirling motion, at a conſiderable diſtance from the place from which it aroſe.

45 Food. The food of the pike-headed whale conſiſts of a ſpecies of *helix*, a ſmall ſpecies of ſalmon which frequents the northern ocean, and the ſand-eel. It has only a ſingle young one at a time. The young whale follows its mother, till another is brought forth; but this does not happen every year.

The ſlighteſt wound is obſerved to occaſion the death of this ſpecies of whale; for the wound very ſoon runs into gangrene. The animal often goes to a great diſtance from the ſpot where it received the fatal blow. The ſureſt method ſeems to be to ſtrike with the ſpear immediately behind the lateral fins; and if it happen that the inteſtines are wounded, the whale inſtantly plunges into the ocean.

This ſpecies frequents chiefly the Greenland ſeas, between the 61ſt and 65th degree of latitude. In winter it appears only in the open ſeas, but in ſummer it approaches the ſhores, and enters the great bays.

The length varies from 50 to 54 feet. Sibbald has given a deſcription of a young one which was thrown aſhore on the coaſt of Scotland. The following are the dimenſions of the principal parts of the body.

	Feet.	Inches.
From the end of the ſnout to the extremity of the tail,	46	0
The greateſt thickneſs at the lateral fins,	20	0
The greateſt thickneſs at the dorſal fin,	12	0
Greateſt breadth of the lower jaw,	4	6
Length of the opening of the mouth,	10	0

Breadth

Claſſification, &c.

	Feet.	Inches.
Breadth of ditto,	4	0
Length of the tongue,	5	0
Breadth of this organ at the root,	3	0
Length of the pectoral fins,	5	0
Breadth of ditto,	1	6
Breadth of the tail fin,	9	6
Length of the penis,	2	0

7. Balæna Musculus, the *Round-lipped Whale.*

French and Greenland, *Rorqual;* Iceland, *Steipe, Reydus.*

46 Characters. In this ſpecies the lower jaw is longeſt and broadeſt. The protuberance on the back is ſtraight, triangular, and ſtretches to the tail.

47 Deſcription. This ſpecies reſembles the preceding in the form of the body. In both there is a prodigious enlargement of the ſide of the head, which gradually diminiſhes towards the tail. The ſtructure of the lower jaw furniſhes the principal characteriſtic diſtinction. In the pike-headed whale it is pointed; but in this ſpecies it is rounded, which gives the head an obtuſe ſhape. The opening of the mouth is ſo wide, that it will admit fourteen men ſtanding upright at the ſame time. The upper jaw is narrower than the lower; it is alſo more pointed at the extremity, and is received into the lower jaw. The tongue is compoſed of a ſoft ſpongy ſubſtance; and is covered with a fine membrane or ſkin. At the baſe of the tongue, on each ſide, there is a fleſhy maſs of a red colour, which ſhuts up the entrance of the gullet ſo cloſely that only ſmall fiſh can be admitted. The whole palate is covered with black laminæ, which terminate at their extremity in a ſilky hair which hangs over the tongue. The laminæ and the hair are of unequal length and breadth. Thoſe which are attached to the anterior part of the jaw are 3 feet long, and 12 inches broad; while thoſe near the entrance to the gullet are ſcarcely ſix inches long by one inch broad.

The eyes are placed above the angle of the mouth; they reſemble thoſe of the ox. Above the eyes, in the middle of the head, are ſituated the two reſpiratory orifices, which are of a pyramidal form.

The pectoral fins are large, a little oval, and tapering; and ſituated oppoſite to the angle of the mouth. The dorſal fin is placed directly oppoſite to the opening of the anus. It tapers a little, and is curved backward. The tail fin is divided into two lobes, which are curved like a ſcythe, and end in a point.

From the end of the lower jaw to the navel, the under part of the body is covered with rugæ or folds, which are two inches broad, having the cavities by which they are ſeparated of the ſame breadth. The ſides are covered with a layer of fat or blubber, 4 inches thick; and on the head and neck, where the fat is more abundant, it is a foot in thickneſs. The upper part of the body is black, the belly is white.

48 Food. The herring is the food of this ſpecies of whale.

In the month of September 1692, a whale of this ſpecies was thrown aſhore on the coaſt of Scotland, as we find it recorded by Sibbald. For twenty years before the fiſhermen had obſerved it occaſionally in purſuit of the herrings; and they recogniſed it in conſequence of a wound which it had received from a muſket. The ball had pierced through the dorſal fin. The following are the principal dimenſions, by the ſame author.

Claſſification, &c.

	Feet.	Inches.
Whole length of the body, from the ſnout to the extremity of the tail.	78	0
Circumference of the body at its greateſt thickneſs,	35	0
Length of the lower jaw,	13	2
Length of the tongue,	15	7
Breadth of ditto,	15	0
Length of the pectoral fins,	10	0
Greateſt breadth of ditto,	2	6
Length of the dorſal fin,	3	0
Height of ditto,	2	0
Diſtance between the extremity of the lobes of the tail,	18	6
Length of the penis,	5	0

8. Balæna Rostrata, the *Piked Whale.*

French, *La Baleine á Bec.*

49 Characters. The jaws are long, narrow, and pointed, the lower jaw is longeſt. The protuberance which is placed on the extremity of the back, is roundiſh at the apex.

50 Deſcription. A ſide view of this ſpecies of whale preſents a lengthened oval form, which has the greateſt tranſverſe diameter towards the middle of the body. The head conſtitutes a fourth part of the length of the body, and is of a conical form. The jaws are larger, narrower, and more pointed than in the other ſpecies. The upper jaw is the ſhorteſt. The eyes are placed a little above the angles of the mouth, and the blow-holes are on the top of the head. The laminæ of the upper jaw, according to Fabricius, are white and very ſhort.

The lateral fins occupy the middle of the height of the ſides; they are broad, nearly oval, and rounded. The dorſal fin is oppoſite to the anus. It is rounded at the top, inclining towards the tail. The tail fin is divided into two lobes which form by their junction a creſcent, the horns of which are directed behind.

The under part of the body, from the point of the lower jaw to the middle of the trunk, is covered with rugæ or folds in parallel rows, which ſtretch on both ſides to the inſertion of the pectoral fins. The back is black; but this gradually diminiſhes towards the belly which is pure white, varied with a mixture of red-diſh ſhades.

This ſpecies of whale ſwims with extraordinary velocity. The fat or blubber is very compact, and yields but a ſmall quantity of oil. The fiſhermen are therefore not very eager in the purſuit of it. But as the inhabitants of Greenland conſider the fleſh very delicate food, they are often employed in taking this whale. They never approach ſo near as to ſtrike it with the harpoon; but diſcharge arrows from a diſtance, the wounds of which almoſt always prove mortal.

51 Food. The food of this whale is the ſame as of ſome of the other ſpecies; chiefly, the ſmall ſpecies of ſalmon of the northern ſeas, and the other ſmall fiſh, which it purſues with ſuch avidity, that they are often ſeen leaping from the ſea to avoid the purſuit. This is the ſmalleſt ſpecies of whale.

It

Claſſification, &c. It is found moſt frequently in the Greenland ſeas; and often alſo in the European. One which was taken on the Dogger bank, meaſured 17 feet in length.

52 Where found. It had loſt the dorſal fin, and by ſome other accident the jaws were ſo ſwelled, that the head formed a maſs ſpecifically lighter than water, and therefore did not ſink in that element.

Class II. MONODON.

Genus 1ſt. Monodon, *Unicorn-fiſh*, or *Sea-Unicorn*.

53 Generic Characters. The body is naked, oval, oblong, round and ſpotted. The head is ſmall, and not eaſily diſtinguiſhed from the reſt of the body. There is only one reſpiratory orifice, which is placed on the top of the head, and ſhut up by a covering cut in form of a comb. The opening of the mouth is ſmall. There are no teeth in the mouth; but from the upper jaw there proceeds, inclining ſometimes to the right ſide, and ſometimes to the left, one long tooth which is twiſted in a ſpiral form. There are rarely two; but when that is the caſe, they are nearly of the ſame length; and there is only one ſpecies which has the teeth curved at the extremity. The eyes and ears are very ſmall. The penis of the male is encloſed in a kind of ſheath; and the female has two mammæ on the belly, between which are the organs of generation.

There are three or four fleſhy fins; two pectoral fins; one at the extremity of the tail; and that of the back is often replaced by a projection which runs its whole length.

Species.

Plate CXL. fig. 2. 1. Monodon Monoceros, the *Narhwal*, or *Unicorn-Fiſh*.

French, *Narhwal, Licorne de mer;* Norwegian, *Lighval;* Iceland, *Narhwal;* Greenland, *Tauvar*.

54 Characters. One tooth in ſhape of a horn, inſerted in the upper jaw, and ſpirally twiſted; there are rarely two.

There is no tail fin.

55 Deſcription The body of the narhwal is oblong and oval; the back broad, convex, and tapering towards the tail; the head is round, ſmall, enlarged at the top, and terminates in an obtuſe rounded ſnout. There are no teeth; but a long twiſted tooth, which is attached to the upper jaw. It was long ſuppoſed that this bony inſtrument of defence, was the horn of a very rare quadruped, and conſequently it was ſold at a very high price. Each tooth is from nine to ten feet in length, and poſſeſſes ſome of the properties of ivory. It is however eaſy to diſtinguiſh them. The fibres of the tooth of the unicorn fiſh are finer than ivory; it is more compact, heavier, and leſs apt to become yellow. The narhwal is rarely furniſhed with more than one tooth, but under the common ſkin of the head on the other ſide, the rudiments of another may be obſerved. There have been, however, different examples of two teeth, and both nearly of the ſame length. In the year 1604, a female having two teeth was taken, and the bones of the head, with the teeth inſerted, were brought to Hamburgh. The two teeth proceeded in a right line from the anterior part of the ſkull. At the place of inſertion they were only two inches aſunder, but gradually diverging, they were ſeparated at the extremity 18 inches. The left tooth was 9 inches in circumference, and ſeven feet 5 inches long. The right was ſeven feet long, and eight inches in circumference at the baſe. Both teeth entered 13 inches into the bones of the head, which was two feet long, and 18 inches broad. Claſſification, &c.

The opening of the mouth is in general very ſmall; not larger according to ſome, than to admit the hand of a man. The tongue is nearly of the ſame ſize. The head ends in a rounded ſnout. The lower lip is thin, and ſhorter than the upper.

The eyes are placed oppoſite to the opening of the mouth; and they are ſurrounded by a kind of eye-lid. On the top of the head there is one reſpiratory orifice, which may be ſhut and opened at pleaſure by means of a fringed covering.

The pectoral fins are about a foot long, and eight inches broad. The fin of the tail is divided into two obtuſe oval lobes. In place of the dorſal fin, there is a ridge or projection about nine inches high, which extends from the breathing hole on the head to the baſe of the fin, which terminates the trunk of the body, and diminiſhes gradually in height as it approaches to the tail.

The ſkin is about one inch in thickneſs. The colour is of a greyiſh white, marked with a great number of black ſpots which ſeem to penetrate the ſubſtance of the ſkin. The ſkin of the belly is of a ſhining white, and ſoft as velvet to the touch.

The oil which the unicorn-fiſh yields is in ſmall quantity, but it is conſidered to be of a ſuperior quality to that of the Greenland or common whale. The food of this fiſh is one of the ſpecies of the *Pleuronectes*, and ſome ſpecies of *helix*. 56 Food.

The length of the unicorn-fiſh is from 20 to 22 feet, the circumference about 12 feet. According to ſome authors indeed, ſome fiſh have been found 60 feet long. It inhabits chiefly the northern ſeas of Europe and America, about Davis ſtraits, and the coaſts of Iceland.

It would be difficult to take this fiſh ſingly and in the open ſea; for they are excellent ſwimmers, move with aſtoniſhing velocity by means of the tail-fin. But as they live in very cold climates, and cannot remain long under water without reſpiring, they frequent the bays that are free of ice. In theſe places they crowd together in ſuch numbers, that they force their teeth into the body of each other; and in this ſituation they can neither plunge into the deep water, nor avoid the purſuit and blows of the fiſhermen.

57 Uſes. There is no part of this fiſh which is not applied to ſome uſeful purpoſe by the inhabitants of Greenland. They are extremely fond of the fleſh, which they eat roaſted or dried in the ſmoke. The inteſtines alſo are regarded as a very delicate food. They are alſo roaſted. The fat affords an oil for burning. From the gullet they obtain bags or bladders which they employ in fiſhing. The tendons are made into excellent thread or ſmall cords. Of the teeth they make ſeveral inſtruments which are uſed in the chaſe, or ſtakes for the conſtruction of their huts.

58 Magnificent throne of the teeth. The kings of Denmark have a moſt magnificent throne which is entirely compoſed of the teeth of the unicorn-fiſh. It is preſerved in the caſtle of Roſenberg; and it is eſteemed of greater value than if it were made of gold.

It has been affirmed by ſome naturaliſts, that there have

Claſſification, &c.

have been found individuals of the unicorn-fiſh having protuberances on the back, and that in others the teeth were not ſpirally twiſted, but ſmooth from the baſe to the extremity. Should theſe differences turn out to be uniform and conſtant, other ſpecies beſide thoſe already known muſt be admitted.

2. MONODON SPURIUS, the *Spurious Narhwal* or *Unicorn-fiſh*.

French, *L'Anarnak*.

59 Characters. In this ſpecies there are two ſmall curved teeth in the upper jaw, and one fin on the back.

60 Deſcription This ſpecies, which has been deſcribed by Fabricius in his *Fauna Greenlandica*, properly belongs to the genus Monodon, at leaſt the characters correſpond more nearly to this genus than to any other. The body is oblong, rounded, and of a black colour. There are no teeth in the mouth; but to the upper jaw are attached two ſmall teeth which are of a conical form, a little curved at the extremity, and about one inch long. Beſide the two pectoral fins, there is a ſmall one on the back.

This ſpecies is one of the ſmalleſt fiſhes belonging to this claſs. It reſpires like the other cetaceous fiſhes by a breathing hole on the top of the head.

It rarely happens that the tail-fin is ſeen when it plunges into the water, but when it reſpires the air it riſes above the ſurface of the ſea as high as the inſretion of the pectoral fins.

The fleſh and fat are found to have a violently purgative effect. From this property the Greenlanders have given it the name *Anarnak*, which is adopted by the French naturaliſts.

It inhabits chiefly the open ſea, and very rarely approaches the ſhores. It is moſt commonly found in the Greenland ſeas.

CLASS III. PHYSETER.

Genus 1ſt. PHYSETER, *Spermaceti Whale*.

61 Generic characters. The body is naked, ſometimes oval, and ſometimes in the form of a lengthened cone. The head is very thick, anteriorly truncated and occupying nearly one half or one third of the whole length of the body. There is only one breathing hole which is placed on the ſnout. The jaws are unequal. The lower is ſhorter and narrower, and it is furniſhed with teeth which are ſometimes of a conical form, and ſometimes blunt; ſometimes ſtraight, but often curved in form of a ſickle. In the upper jaw there are correſponding cavities. It is alſo furniſhed with teeth, but they are flat, lie horizontally, and are ſcarcely viſible.

The eyes are ſmall, and are ſituated near the inſertion of the pectoral fins. The external opening of the organ of hearing is very ſmall, and not eaſily detected.

The penis, as in the other claſſes, is included in a ſheath. The female has two mammæ ſituated in the abdomen, and between them are placed the parts of generation, near which is the external opening of the anus.

There are three fleſhy fins. Two of theſe are the pectoral; and the third is at the extremity of the tail. The place of the dorſal fin is occupied by a falſe fin, and often by a kind of calloſity.

Claſſification, &c.

SPECIES.

1. PHYSETER MACROCEPHALUS, the *Large Spermaceti Whale*.

French, *Cachalot*; Germ. *Pottfiſch*; Dutch, *Potviſch*; Norweg. *Kaſkelot*, *Potfiſk*, *Trold*, *Hual*. Plate CLX. fig. 3.

62 Characters. There is a ſpurious fin on the back. The teeth are curved, and a little pointed at the extremity.

63 Deſcription Of all the ſpecies belonging to this genus, this, on account of its great bulk, is entitled to the firſt place. The head, which occupies the third part of the body, is a large maſs of a ſquare form, angular at the ſides, and truncated before. The upper is of much greater length than the lower. It is alſo broader, its edges forming a very conſiderable projection, and folded back towards the centre, where there is an oval longitudinal cavity deſtined to receive the lower jaw. The lower jaw is furniſhed on each ſide with a row of ſtrong conical teeth, a little curved towards the mouth, and projecting from the alveolar proceſs about one and a half inches. The two teeth at the anterior extremity of the jaw, and the four which terminate on each ſide the two rows, are ſmaller and more pointed. The colour of them externally approaches to that of ivory; but internally they are leſs hard and compact, and are of an aſh-colour. It has been ſuppoſed that the teeth become longer, thicker, and more curved, in proportion to the age of the animal. The ordinary length is about ſix inches, and three inches in circumference at the baſe. The upper jaw is furniſhed with as many cavities as there are teeth in the lower jaw; but, in the interſtices which ſeparate theſe cavities, there are about 20 ſmall teeth placed horizontally, and raiſed a little above the fleſh. Theſe teeth are ſharp on the ſide oppoſite to the place of inſertion, but preſent a ſmooth, plain, and oblique ſurface, which fills up the interval that ſeparates the cavities. This oblique ſurface is only viſible; the reſt of the tooth is covered with fleſh. And from not attending to the form and diſpoſition of theſe teeth, it has been generally ſaid that the ſpermaceti whale had none in the upper jaw.

The tongue is a maſs of fleſh of a ſquare form, and of a livid red colour, which fills almoſt the whole of the bottom of the mouth.

The breathing holes, paſſing diagonally through the head, unite into one at the ſuperior extremity of the ſnout, where the opening is about ſix inches diameter.

The eyes are black, very ſmall when compared to the bulk of the body, and ſurrounded with a ſtrong ſhort hair, which is not very perceptible. The opening of the ears is not eaſily detected. It is placed behind the orbit of the eyes, on a cutaneous excreſcence between the eyes and the pectoral fins.

The head is ſeparated from the trunk, by a tranſverſe groove, which extends to the place of inſertion of the pectoral fins. Theſe fins are of an oval form, three or four feet long, and three inches thick.

On the back there is a calloſity which extends two-thirds of the whole length. It riſes ſeveral inches above the ſurface, and is ſlightly inclined. Where it terminates behind it is truncated.

The organs of generations reſemble thoſe of quadrupeds. The penis of the male is encloſed in a ſheath.

On

Claſſification, &c.

On each ſide of the ſame organs in the female are placed the mammæ, which are four or five inches long.

The tail, which is ſmall for the ſize of the fiſh, terminates in a fin, which is divided into two lobes, hollowed out in form of a ſickle.

The back is black, or of a ſlate blue ſpotted with white. The belly is alſo white. The fat or blubber, which lies immediately under the ſkin, is about five or ſix inches thick on the back, and rather leſs on the belly. The fleſh is of a pale red, like that of pork. The head, though very large, is the leaſt fleſhy part of the body. But it yields the ſubſtance called *ſpermaceti*, in great abundance. This ſeems to vary in colour, according to the climate in which the whale has lived.

The food of the ſpermaceti whale is the dog-fiſh and the lump-fiſh.

This whale ſwims with great velocity; and he often appears on the ſurface of the water. It is at this time that the fiſhermen take the opportunity of ſtriking him with their ſpears; and it often happens, that the parts of the body which have been wounded become gangrenous, and fall off before the death of the animal.

The fleſh, the ſkin, the fat, and the inteſtines, are applied to the ſame purpoſes as thoſe of the unicorn-fiſh. The tongue, roaſted, is reckoned excellent food; and of the different bones of the body beſide the teeth inſtruments for the chaſe are made.

This whale inhabits chiefly the Greenland ſeas and Davis ſtraits; but occaſionally is found on the European ſhores to the ſouthward. In the year 1784, in the month of March, 31 of theſe fiſhes came on ſhore on the weſtern coaſt of Audierne in Lower Brittany in France. The following are the dimenſions of one of theſe taken at the time.

	Feet.	Inches.
Total length,	44	6
From the anterior extremity of the ſnout to the eyes,	8	0
From the eyes to the pectoral fins,	3	0
From the pectoral fins to the organs of generation,	19	7
Length of the tail,	6	9
Diſtance of the lobes of the tail,	10	0
Circumference at the greateſt thickneſs,	34	8
Length of the upper jaw,	5	0
——— lower jaw,	4	6
Opening of the mouth,	3	10
Breadth of the ſnout,	5	0

2. Physeter Catodon, the *Small Spermaceti Whale.*

French, *Le Petit Cachalot;* Norwegian, *Swine, Hual;* Greenland, *Kegutilik.*

64 Characters. In this ſpecies, there is a rough ſpurious fin on the back. The teeth are curved and blunt.

65 Deſcription Without attending to the form and diſpoſition of the teeth in the cetaceous fiſhes, the characteriſtic marks are often ambiguous. All naturaliſts agree, that the characters taken from the teeth are the moſt certain, becauſe they are moſt conſtant and uniform in ſtructure and appearance, and leſs ſubject to thoſe variations which age and climate ſeem to produce. This ſpecies is, in this manner, eaſily diſtinguiſhed from the others. The head is of a round form; the opening of the mouth is of moderate ſize; the lower jaw is longer, but not ſo broad as the upper. It is furniſhed with a row of teeth on each ſide; and theſe correſpond to the cavities in the upper jaw, which receive them. There is a peculiar ſtructure of the teeth in this ſpecies. That part of the tooth which riſes above the gum has a greater thickneſs than where it is inſerted into the jaw; and beſides, each tooth is flat at the top, and marked with concentric lines. The longeſt teeth are two inches in length, and about an inch in circumference at the greateſt thickneſs. Claſſification, &c.

Sibbald has miſtaken the breathing hole for noſtrils; and this ſeems to have ariſen from the poſition of the breathing holes near the ſnout of the fiſh.

This ſpecies is chiefly an inhabitant of the northern ſeas.

Towards the end of the 17th century, 102 of this ſpecies came on ſhore at Cairſton in the Orkney iſlands. The longeſt was 24 feet.

3. Physeter Trumpo, the *Spermaceti Whale.*

French, *Le Cachalot de la Nouvelle Angleterre; Le Trumpo.*

66 Characters. This ſpecies is diſtinguiſhed by a bunch on the back, and having the teeth ſtraight and pointed.

67 Deſcription The head of this ſpecies is of an immenſe ſize. It divides the body nearly into two equal parts. The upper jaw is much longer and thicker than the lower, which is furniſhed with 18 teeth, ſtraight and pointed, about three inches diſtant from each other; and when the mouth is ſhut, they are received into cavities of the upper jaw.

The eyes are ſmall. The breathing hole is at leaſt a foot in diameter, and it is placed at the ſuperior extremity of the ſnout.

The thickeſt part of the body is near the inſertion of the pectoral fins. Theſe are very ſmall; and that of the tail is divided into two lobes. In place of the dorſal fin, there is a bunch on the back which is more than a foot thick. It is placed nearly oppoſite to the parts of generation.

The ſkin is of a grayiſh colour, and very ſoft to the touch. The length of this whale varies from 48 to 60 feet.

It is chiefly an inhabitant of the ſeas which waſh the ſhores of New England.

An individual of this ſpecies landed in the year 1741, near Bayonne in France. It yielded ten tons of ſpermaceti, which was reckoned of a ſuperior quality to that of the large ſpermaceti whale. In the ſtomach of the ſame whale was found a round maſs of ſeven pounds weight, which was taken for ambergreaſe.

68 Spermaceti. The ſubſtance called *ſpermaceti*, is lodged in particular cells in the head near the ſeat of the brain. It is extracted by making a hole in the ſkull.

It has been obſerved by ſome naturaliſts, that this whale is more agile and more dangerous than any other of the ſpecies. When it is wounded, it is ſaid that it throws itſelf on its back, and defends itſelf with its mouth.

Mr Pennant has deſcribed this under the name of the *blunt-headed whale*, (Phyſeter Microps, Lin.) But if we attend to the form of the body, the ſtructure of the

Claſſification, &c.

the head, the number and ſtructure of the teeth, it ſeems to conſtitute a diſtinct ſpecies.

Dimenſions of the Spermaceti Whale thrown aſhore near Bayonne.

	Feet.	Inches.
Total length,	49	0
Greateſt circumference at the eyes,	27	0
From the extremity of the tail fin to the opening of the anus,	14	0
Length of the penis,	4	0
——— ſheath which encloſes it.	1	6
Diameter of the penis,	0	7
Diſtance of the extremities of the two lobes of the tail,	13	0

4. PHYSETER CYLINDRICUS, the *Round Spermaceti Whale.*

69 Characters. There is a bunch on the back; the teeth are curved and pointed at the top; the breathing hole is in the middle of the ſnout.

70 Deſcription The form and relative ſituation of the trunk and head, the poſition of the breathing-hole, the relative length of the jaws, the number and ſtructure of the teeth, and eſpecially the ſize of the dorſal fin, preſent differences which ſufficiently diſtinguiſh this from the following ſpecies. The body is cylindrical, from the extremity of the ſnout to a line drawn perpendicular to the place where the penis is inſerted, and from thence to the tail-fin it gradually diminiſhes. The head is at leaſt the third of the whole length of the body. The profile of the head preſents a kind of parallelogram. The jaws are nearly of equal length. On each ſide of the lower jaw there is a row of 25 curved, ſharp-pointed teeth. The breathing-hole is placed at the ſuperior extremity of the ſnout. The dorſal fin is replaced by a bunch, 18 inches high, and four and a half inches long at the baſe. The tail-fin is divided into two lobes, forming a kind of creſcent.

One of this ſpecies is deſcribed by Anderſon, which was 48 feet long, 12 of perpendicular height, and 36 in circumference, at its greateſt thickneſs.

5. PHYSETER MICROPS, the *Black-headed Spermaceti Whale* or *Cachalot.*

French, *Cachalot Microps, Cachalot à dents en Faucille*; Norwegian, *Staur-Hyming*; Greenland, *Tiſaguſik.*

71 Characters. In this ſpecies there is a long, ſtraight fin on the back. The teeth are curved, the point is at firſt directed to the mouth, and then turns outwards.

72 Deſcription The deſcriptions of naturaliſts who have treated of this ſpecies of whale are greatly confuſed; and this probably ariſes from not having attended ſufficiently to the form of the teeth. According to Fabricius, there are only 22 teeth in the lower jaw, 11 on each ſide. All theſe teeth are curved, having the concave ſide towards the mouth, and are ſunk in the jaw-bone, two-thirds of their whole length. The external part of the teeth is white as ivory, of a conical form; and the point, which is ſharp, inclines a little outwardly. That part of the tooth which is ſunk in the jaw is compreſſed on two ſides, and furrowed on that ſide next to the gullet. The Greenlanders ſay that this whale has teeth in the upper jaw: but this is not clearly aſcertained. Perhaps they are only flatted teeth, ſimilar to what we have deſcribed in the great ſpermaceti whale. Each tooth extends to a finger length, and is about one and a half inch broad. The longeſt occupy the middle part of the jaw. The ſmaller are at the extremities. The ſnout ends in a blunt ſurface; and, according to moſt naturaliſts, the upper jaw is the longeſt. Claſſification, &c.

The pectoral fins are about four feet long. What occupies the place of a fin on the back is of conſiderable height, and has been by ſome naturaliſts compared to a long needle.

This whale is the declared enemy of ſome of the other whales, as the pike-headed whale and the porpoiſe, which it purſues as its prey. In Greenland the fleſh of this whale is greatly eſteemed, even more than that of any of the other ſpecies. It is rarely taken with the harpoon.

It inhabits chiefly the northern ocean.

6. PHYSETER MULAR.

French, *Le Cachalot Mular.*

73 Characters. This ſpecies is diſtinguiſhed by a very elevated fin on the middle of the back. The teeth are ſlightly curved and obtuſe.

74 Deſcription This ſpecies reſembles the former in the general ſtructure of the body. It differs in the form of the teeth, which are leſs curved, and are obtuſe. The longeſt, which are eight inches in length, and nine inches in circumference, occupy the front of the jaw. The others are only ſix inches long. Sometimes the teeth are found to be hollow, and ſometimes they are ſolid. Is this owing to the difference of age in the individuals in which it has been obſerved? Beſide the pectoral fins, that which is placed on the back is very remarkable on account of its length. Sibbald compares it to the mizen-maſt of a veſſel.

According to Anderſon, this ſpecies is farther diſtinguiſhed by having three bunches or protuberances towards the extremity of the back; the firſt is 18 inches high; the ſecond, ſix inches; and the laſt only three inches. The ſame hiſtorian has obſerved, that he was informed by the captain of a ſhip, that he ſaw on the coaſt of Greenland, a great number of this ſpecies of whale, at the head of which was one of 100 feet long, which ſeemed to be the leader; and which, at the appearance of the ſhip, gave ſuch a terrible ſhout, ſpouting water at the ſame time, as to ſhake the veſſel. At this ſignal, the whole made a precipitate retreat.

This ſpecies is gregarious, and frequents the ſeas about the North Cape. They are but rarely taken; for they are very wild and difficult to wound. It appears, that the harpoon can only pierce them in one or two places near the pectoral-fins.

The fat or blubber is very tendinous, and yields but a ſmall proportion of oil.

CLASS IV. DELPHINUS.

Genus 1ſt, DELPHINUS, the *Dolphin.*

75 Generic characters. The body is naked, oval, or of an oblong conical ſhape, of a blue colour, inclining to black. The head is conical, diminiſhing gradually towards the ſnout.

Claſſification, &c. The breathing-hole, which is on the top of the head, is in form of a creſcent, the horns of which are directed towards the ſnout. The jaws are of equal length, ſometimes beaked, and ſometimes rounded. They are furniſhed with teeth, which are conical or compreſſed, pointed or obtuſe, and in ſome ſpecies notched.

The eyes are placed near the angles of the mouth. The pupil of the eye is black, and the iris white. The external opening of the ears is ſituated behind the eyes. The noſtrils terminate in the ſnout.

The penis of the male is included in a ſheath; and the mammæ of the female are attached to the belly; and between them are the organs of generation.

There are four fins; two are pectoral; there is one on the back, and one at the extremity of the tail. In one ſpecies only the dorſal-fin is wanting.

Species.

1. Delphinus Phocæna, the *Porpoiſe* or *Porpeſſe*.

French, *Le Marſouin*; Spaniſh, *Marſopa*; Dutch, *Bruinviſch*; German, *Meerſchweim*, *Braunfiſch*; Danes, *Marſwin*, *Tumler*; Norweg. *Niſe*; Greenland, *Niſa*.

76 Characters. The form of the body is conical. The dorſal fin is triangular. The ſnout is pointed. The teeth are enlarged at the ſummit, rounded and cutting.

77 Deſcription. The body of this fiſh is round, thick, and diminiſhes towards the tail. The head reſembles an obtuſe cone. It is ſwelled out towards the top above the orbits of the eyes. It then gradually diminiſhes, and ends in a ſharp ſnout.

The eyes are placed oppoſite to the opening of the mouth; and the pupil of the eye, which is black, is ſurrounded with a white iris. Behind the eyes there is a ſmall round hole, about one inch in diameter: This is the organ of hearing. The noſtrils are placed between the breathing-hole and the extremity of the ſnout. The breathing-hole is ſituated on the top of the head, in a line perpendicular to the interval between the eyes and the angles of the mouth.

The pectoral fins are attached to the edges of the lower ſurface of the body. The dorſal fin is triangular, and is ſituated very nearly on the middle of the trunk. Directly under the dorſal fin on the belly are the parts of generation. The anus is ſituated at an equal diſtance between the parts of generation and the tail fin.

The length of the porpoiſe is from four feet to ſix and eight. This fiſh is an excellent ſwimmer. When it riſes to the ſurface to reſpire, the back only appears; the head and tail are kept under water. But when it is dead, it becomes ſtraight.

78 Food. It feeds on ſmall fiſhes, and purſues them with inconceivable rapidity.

79 Manners. The porpoiſe is generally gregarious: this is particularly the caſe in the time of copulation in the month of Auguſt. It is not unuſual to ſee at that time 15 males in purſuit of one female; and ſo eager are they in the chaſe, that they are often thrown aſhore. The female goes with young 10 months, and brings forth one at a time. At birth the young one is of conſiderable ſize, and it conſtantly follows the mother till it is weaned. When a pregnant female is killed, it has been obſerved that the tail of the fœtus is ſeen thruſt through the navel of the mother. This is ſuppoſed to be occaſioned by the ſpaſmodic contraction, produced by the efforts of the mother in the ſtruggles of death.

Claſſification, &c.

80 Uſes. The fleſh of the porpoiſe has a diſagreeable oily taſte. It is, however, uſed as food by the inhabitants of Lapland and of Greenland. In Greenland they ſuffer it to undergo ſome degree of putrefaction to make it tender, and then they prepare it by roaſting or boiling. They uſe the ſkin, the fat, and the entrails for this purpoſe. The Dutch and the Danes take the porpoiſe only for the extraction of the oil.

The porpoiſe inhabits thoſe places which are ſheltered by rocks and bays, and is oftener ſeen in ſummer than in winter.

2. Delphinus Delphis, the *Dolphin, or Bottle-noſe Whale*.

French, *Dauphin*; German, *Meerſchwein*, *Tummler*; Dutch, *Dolphin-Tuymelaar*; Norwegian, *Springer*; Iceland, *Leipter*.

81 Characters. The body is nearly oval. The dorſal fin is curved at the top. The ſnout is flattened and ſharp. The teeth are cylindrical and pointed.

82 Deſcription. The greateſt thickneſs of the dolphin is at the inſertion of the pectoral fins; from which the body gradually diminiſhes towards the head and tail, and thus has the oval form. The head enlarges at the top like that of the porpoiſe; but, in the dolphin, it diminiſhes in thickneſs, and ends in a flatted beak, like that of a gooſe. The jaws are of equal length, and furniſhed on each ſide with a row of cylindrical teeth, a little pointed at the end, and projecting near one and a half inches above the gum. It would appear, that the number of teeth varies according to the age and ſex. Klein has reckoned 96 in the upper jaw, and 90 in the under. Mr Pennant, on the contrary, mentions, that he ſaw 19 teeth in the latter, and 21 in the former. Forty-ſeven teeth have been obſerved by others in each jaw.

The eyes are placed almoſt in the ſame line with the opening of the mouth. The breathing-hole is on the top of the head, oppoſite to the orbit of the eyes. It appears in form of a creſcent, the horns of which are directed towards the ſnout.

The pectoral fins are oval, and inſerted at the under part of the breaſt. The dorſal fin occupies the middle of the body. It is curved backwards at the extremity. The tail-fin is divided into two lobes, the one of which folds over the other.

The upper-ſurface of the body is black; the breaſt is white. From under the eyes on each ſide paſſes a white ray, which ſtretches towards the pectoral fins.

The dolphin is almoſt always an inhabitant of the open ſeas, and very rarely approaches the ſhore. His motions are inconceivably ſwift; and hence he has been named by the mariners, the *arrow of the ſea*.

The length of the dolphin varies from five to nine or ten feet.

83 Fabulous hiſtory. The deſcription which has now been given, has little relation to the fanciful accounts which have been detailed of this fiſh; or to the imaginary repreſentations by the ancient painters and engravers. On the pieces of money which were in circulation in the time of Alexander the Great, and are preſerved by Belon, as well as on other medals, the dolphin is repreſented with

Claſſification, &c. with a very large head, a ſpacious open mouth, and the tail raiſed above the head.

No animal has been more celebrated by the ancient poets and hiſtorians than the dolphin. From the earlieſt ages he was conſidered as conſecrated to the gods, and honoured as the benefactor of man. Pliny, Ælian, and other ancient authors, ſpeak highly of his attachment to mankind. The younger Pliny has written a charming ſtory of the loves of a dolphin for Hippus; and Ovid relates with all the beauties of poetry, the ſtory of the muſician Arion, who being purſued by pirates and thrown into the ſea, was reſcued and ſaved by this kind animal.

Inde (fide majus) tergo Delphina recurvo,
Se memorant onere ſuppoſuiſſe novo.
Ille ſedens citharamque tenet, pretiumque vehendi
Cantat, et æquoreas carmine mulcet aquas.
Dî pia facta vident. Aſtris Delphina recepit
Jupiter; et ſtellas juſſit habere novem.
OVID. Faſti, lib. ii. 117.

But (paſt belief) a dolphin's arched back
Preſerv'd Arion from his deſtined wreck;
Secure he ſits, and with harmonious ſtrains
Requites his bearer for his friendly pains.
The gods approve: the dolphin heaven adorns,
And with nine ſtars a conſtellation forms.

But after all theſe fabulous accounts of the dolphin by the ancients, and the preſages drawn by the modern ſailors from their movements, it does not appear that this ſpecies of fiſh is endowed with more ſagacity than any other of the cetaceous fiſhes, or diſcovers greater attachment to man. What may have been the foundation of theſe fables, it is not our preſent object to inquire. It is true, that the dolphin and others of the cetaceous fiſhes accompany ſhips for ſeveral days together. But this ſeems to be in ſearch of food, on account of the offals of animal matters that are thrown overboard.

3. DELPHINUS TURSIO.

Greenland, *Neſarnak;* French, *Le Neſarnak.*

84 Characters. The form of the body is conical. The dorſal fin is curved. The ſnout is compreſſed above. The teeth are ſtraight and blunt.

85 Deſcription. The greateſt thickneſs of this ſpecies is between the dorſal and pectoral fins. From this to the extremity of the tail the body becomes gradually more ſlender.

The breathing hole, which is placed above the orbits of the eyes, is about $1\frac{1}{2}$ inches in diameter. The anterior part of the head is inclined and rounded, and terminates in a flat beak. The lower jaw is the longeſt. Both jaws are furniſhed with 42 cylindrical teeth which are diſpoſed in a ſingle row.

The pectoral fins are very low, and are of a falciform ſhape. The dorſal fin riſes like an inclined plane, and is incurvated behind. At the poſterior baſe of the latter fin there ariſes a projection which ſtretches to the tail. The tail fin is divided into two lobes in form of a creſcent.

The upper part of the body is black; the belly is white.

It has been obſerved by ſome naturaliſts, that when this ſpecies riſes to the ſurface to reſpire, a great part of the body appears above water. It inhabits the open ſeas, and is conſequently taken with difficulty. The fleſh, the fat, and the entrails, are eaten in the ſame way as the porpoiſe.

Claſſification, &c.

4. DELPHINUS ORCA, the *Grampus.*

Plate CXL. fig. 4.

French, *Epaulard;* Norwegian, *Spek-Hugger, Hoval-Hund;* Dutch, *Botſkop;* Iceland, *Huyding;* Swedes, *L'Opare.*

86 Characters. The body is nearly oval. The dorſal fin is very high. The teeth are conical and ſlightly curved.

87 Deſcription. The profile of the grampus is oval and oblong. The greateſt thickneſs is about the middle of the trunk, from which it gradually diminiſhes towards both extremities. The ſnout is ſhort and round. The lower jaw is broader than the upper. Both jaws are furniſhed with conical teeth, which are unequal and curved at the top, and are from 20 to 30 in number in each jaw.

The eyes are ſituated in the ſame line with the opening of the mouth.

But the moſt diſtinguiſhing mark of the grampus is the dorſal fin, which riſes from the middle of the back in the form of a cone, and is nearly four feet in height. The pectoral fins are very broad and nearly oval. The tail fin is divided into two lobes in the form of a creſcent. The penis is three feet in length.

The upper part of the body is black; the belly is white. Sometimes white ſpots are obſerved on the head and back.

The grampus is the largeſt fiſh belonging to the genus. Some have been ſeen of 25 feet in length by 12 or 13 in circumference. One of 24 feet long was taken in the mouth of the river Thames in the year 1759.

All naturaliſts agree in deſcribing the grampus as the moſt cruel and voracious of the family of the dolphin. Its ordinary food is the ſeal and ſome ſpecies of flat fiſh. But it is ſaid, that it will attack the porpoiſe, and even the large whale. The latter, ſo far from defending himſelf, is ſtruck with terror, utters dreadful ſhouts, and to eſcape from the enemy, quits the open ſeas, and retires towards the coaſts, which is perhaps the reaſon that the whale is ſometimes thrown aſhore. The grampus, however, is often the victim of its voracity. It is at this time that the fiſhermen watch the opportunity of ſtriking him with the harpoon.

When the emperor Claudius was engaged in the conſtruction of the harbour of Oſtia, a grampus, attracted by ſome ſkins which had been ſunk in a ſhipwreck, came upon the coaſt. There he remained for ſeveral days; and, forming a kind of canal to receive his huge body in the ſand, was protected from the agitation of the ſea. While in purſuit of his prey one day, he was driven aſhore by the violence of the waves. The back appeared above the ſurface of the ſea, and reſembled a ſhip with its bottom upwards. The emperor cauſed ſtrong nets to be ſtretched acroſs the mouth of the harbour to prevent the eſcape of the fiſh, in caſe he ſhould again get into the water. He then advanced in perſon, accompanied with his pretorian bands, and exhibited a very amuſing ſpectacle to the Romans. The ſoldiers embarked in boats were ordered to attack him with ſpears and other miſſile weapons. One of the boats was filled with water, and

Claſſification, &c.

ſunk in conſequence of the fiſh ſpouting with great violence.

a. A variety of the grampus is deſcribed by the late Mr John Hunter, in the Philoſophical Tranſactions for 1787. It is diſtinguiſhed particularly by having a very large belly, which diminiſhes ſuddenly towards the region of the anus. The dorſal fin reaches nearer the tail. It has the form of a rectangular triangle, and is longer, but leſs elevated than the firſt deſcribed. The lower part of the body is not perfectly white, but is marked with brown and black ſpots.

5. Delphinus Gladiator, the *Sea-Sword*.

88 Characters. The form of the body of this ſpecies is conical. The dorſal fin reſembles a ſabre. The teeth are ſmall and ſharp.

89 Deſcription This ſpecies comes very near the grampus in the form of the head; but it is chiefly diſtinguiſhed by the dorſal fin, which is three or four feet high, and about 18 inches broad at the baſe. It becomes ſlender towards the ſummit, and is incurvated towards the tail. This fin ſeems to be an offenſive inſtrument; for with it they ſtrike and wound the whale. The length is from 23 to 25 feet.

This ſpecies is gregarious. They are found together in ſmall bodies, which attack the whale with great fury, and tear off large maſſes from his body. When he becomes warm and fatigued, he lolls out his tongue, which is inſtantly ſeized by the watchful enemy. They even enter the mouth and tear out the tongue entirely, which ſeems with them to be a delicate morſel. The delphinus gladiator poſſeſſes immenſe ſtrength. They have been known to ſeize upon a dead whale that was dragged by a number of boats, and carry it to the bottom.

They are found near Spitzbergen, in Davis ſtraits, and on the coaſts of New England, and even ſo far north as the 79° of latitude. They are very fat, and the oil which they yield is eſteemed very good.

6. Delphinus Leucas.

Beluga, Pennant's Quadrup. *Wittfiſch*, Anderſon's Iceland.

90 Characters. The form of the body is conical. There is no dorſal fin. The teeth are ſhort and blunt.

91 Deſcription This ſpecies has been arranged by ſome naturaliſts among the whales, but having teeth in both jaws makes it properly come under this genus. The body reſembles a lengthened cone, having the baſe at the pectoral fins, and the vertex at the tail. The head is ſhort, and ends in an obtuſe ſnout, on the top of which is a protuberance in which is the blow-hole, which terminates in an oblique direction towards the poſterior part of the body. The jaws are nearly equal. The lower jaw is furniſhed with nine ſmall obtuſe teeth on each ſide, which reſemble in ſtructure the grinding teeth of quadrupeds. The teeth in the fore part of the jaw are the ſmalleſt. In the upper jaw the number of teeth is the ſame, but they are more pointed and ſlightly curved.

The eyes are not larger than thoſe of the hog. The opening of the mouth is ſmall, and the tongue is ſtrongly attached to the lower jaw. Behind the eyes is the external opening of the ear, but it is ſcarcely viſible.

The pectoral-fins are broad and of an oval figure. The dorſal-fin is wanting, but in its place there is an angular protuberance. The tail fin is divided into two rounded lobes. Claſſification, &c.

The penis of the male is bony, of a white colour, and encloſed in a ſheath. The mammæ of the female are placed on each ſide of the organs of generation.

The whole body is white, and marked in young fiſhes with brown and blue ſpots. The ſkin is an inch thick, and covers a layer of fat of three inches. It is ſaid that the fleſh of this ſpecies has a reddiſh colour like that of pork.

It lives on different fiſhes, particularly the cod and the ſoal fiſh. And as the throat is of ſmall capacity, it is ſometimes ſuffocated in attempting to ſwallow fiſh of too large ſize. The female has one young at a time, which at birth is of a greeniſh colour, but becomes afterwards bluiſh, and as it advances in age is white. The females are gregarious, and the young follow at their ſides, imitating all their motions. This ſpecies is often obſerved following ſhips, and exhibiting by a a thouſand different motions, an amuſing ſpectacle.

It quits the open ſea during the rigour of winter, and enters the bays that are free from ice. It is ſeldom an object of trade, on account of the little advantage from the fat. Their arrival, however, is conſidered by the whale fiſhers as the fortunate preſage of an abundant fiſhery. The length is from 12 to 18 feet.

7. Delphinus Bidentatus.

92 Characters. The body is conical. The dorſal fin is ſpear-ſhaped. The ſnout is ſlender and flat. There are two-ſharp teeth in the lower jaw.

93 Deſcription This ſpecies in ſome of its characters reſembles the *delphinus turſio*, but in others is ſo different that it may properly be regarded as a diſtinct ſpecies. The forehead is convex and rounded. The upper jaw is flat, and ends in a beak like that of a duck; but there are only two ſharp teeth at the anterior extremity of the lower jaw. The pectoral fins, which are of an oval form and ſmall for the ſize of the body, are placed oppoſite to the angles of the mouth. The place of the dorſal fin correſponds to the origin of the tail, is ſpear-ſhaped, pointed, and inclines backward. The tail-fin is divided into lobes forming by their union a creſcent. The lower part of the body is of a light brown colour, the upper part is browniſh-black. This ſpecies is ſuppoſed to be from 30 to 40 feet long.

8. Delphinus Butskopf, *Bottle-headed*, or *Beaked Whale*.

94 Characters. The form of the body is conical. The dorſal fin is incurvated towards the tail. The ſnout is flat and ſlender. The upper jaw and the palate are furniſhed with ſmall teeth.

95 Deſcription The body repreſents a cone whoſe ſummit is towards the tail. The head is of greater height than breadth. The front, which is full and round, becomes ſuddenly narrow, and ends in a flat beak rounded at the extremity. The breathing-hole is on the top of the head, oppoſite to the orbit of the eyes; it forms a creſcent whoſe horns are turned towards the tail. This is the

characteriſtic

Claſſification, &c.

characteriſtic mark between this and the other ſpecies of *delphinus*. In place of teeth the ſurface of the palate and upper jaw are covered with ſmall points, which are unequal and hard. The tongue adheres to the lower jaw, and is notched at the edges. The edge of the upper jaw is alſo notched.

The eyes are convex as in quadrupeds. They are ſurrounded with eyelids, and are placed nearly in the middle of the ſide of the head.

The pectoral fins are attached to the lower part of the breaſt; they are ſmall in proportion to the ſize of the fiſh. The dorſal fin is nearer the tail than the ſnout: the ſummit is incurvated backward. The tail-fin is divided into two lobes in form of a ſickle.

The whole body excepting the belly is of a leaden colour.

In the *Journal de Phyſique* for the year 1789, M. Bauſſard has publiſhed an account of two cetaceous fiſhes which were taken near Honfleur in September of the preceding year. The largeſt was 23½ feet long, and the ſmalleſt 12½. The fiſhers of Honfleur perceived them at a diſtance ſtruggling on the ſtrand. When they approached they found the ſmalleſt ſtuck on the ſand in ſhallow water. The mother made many attempts to move her young one into deep water, and not only failed but ſtuck faſt by the head, the heavieſt part of the body. The fiſhermen firſt took poſſeſſion of the young one, ſecured it with ropes; and by their own exertions, aided by a horſe and the flowing of the ſea, ſucceeded in bringing it on ſhore. They then went into the water up to the middle to ſecure the mother; and having made above 50 wounds with knives on the head and back, and a large wound in the belly, at which the fiſh ſeemed to be in great pain, by uttering groans like thoſe of a hog, they were driven off by the violent motion of the tail. A ſmall anchor was then brought, which was introduced into the breathing-hole, and a rope was faſtened round the tail. The fiſh finding herſelf thus entangled, made ſuch violent efforts, that ſhe broke a thick rope, diſengaged herſelf from the anchor, and taking the advantage of the riſing tide, eſcaped and launched into the deep, at the ſame inſtant throwing up an immenſe quantity of water mixed with blood to the height of 12 feet. She was found next day floating on the water quite dead, at the diſtance of three leagues from Honfleur.

The following are the principal dimenſions of the young fiſh and the mother.

	Young one.		*Mother.*	
	Feet.	Inches.	Feet.	Inches.
Total length	12	6	23	6
Greateſt circumference	8	0	15	7
Diſtance from the breathing-hole to the extremity of the ſnout	1	11	4	4
Length of the dorſal fin	1	0	2	0
Height of ditto	0	7	1	3
Length of the pectoral fins	1	0	2	0
Breadth of ditto	0	7	1	3
Breadth of the tail fin	3	2	6	10

M. Bonnaterre, Encycloped Method

9. Delphinus Feres.

96 Characters.

In this ſpecies there is one fin on the back. The head is rounded. The teeth are oval and obtuſe.

The head is nearly of the ſame height as the length. It is very thick at the top, and ſuddenly diminiſhing towards the anterior part ends in a ſhort round ſnout. The jaws are equal; they are covered with membranous lips, and furniſhed internally with a row of teeth; 20 have been reckoned in each jaw. The form of the teeth conſtitutes the diſtinctive character of the ſpecies. The large and the ſmall teeth are equal in number. The largeſt are above an inch long by half an inch broad. The ſmall teeth are only five or ſix lines in length.

Anatomy and Phyſiology.

97 Deſcription

The ſkeleton of one of this ſpecies is preſerved in the cabinet of natural hiſtory at Frejus in France. The length is 14 feet. The bones of the ſkull are 1 foot 10 inches long, and 1 foot 5 inches broad.

This ſpecies is found in the Mediterranean ſea.

Chap. II. *Of the Anatomy and Phyſiology of Cetaceous Fiſhes.*

98 Difficulties in acquiring a knowledge of their ſtructure.

It has fallen to the lot of few anatomiſts to have an opportunity of examining with accuracy the ſtructure of cetaceous fiſhes. The ſame difficulties which have retarded the progreſs of their natural hiſtory, operate perhaps ſtill more powerfully in preventing the acquiſition of information with regard to their anatomical ſtructure. They are not inhabitants of thoſe parts of the world where this knowledge is in that improved ſtate to render ſuch inveſtigations ſucceſsful; and when they are accidentally found on the ſhores of civilized countries, the anatomiſt, whoſe ſkill and dexterity only could be advantageouſly employed in the examination, is not always at hand, and they are too large to be tranſported to the diſſecting-room, where the nature and ſtructure of the different parts could be patiently traced and faithfully demonſtrated. Several of the ſpecies of this tribe of fiſhes have been diſſected by the late Mr John Hunter, the detail of which he has given in a paper on the Structure and Economy of Whales, in the Philoſophical Tranſactions for the year 1787; and to this paper we muſt acknowledge ourſelves indebted for the principal part of the anatomical knowledge which we propoſe to lay before our readers in the preſent chapter.

99 Diſtinctive characters.

We have already mentioned the characters which diſtinguiſh the whale tribe from fiſhes in general. They have indeed nothing peculiar to fiſh except that they live in the ſame element, and have the ſame powers of progreſſive motion as thoſe fiſh, which from their nature muſt move with great velocity. This ſeems to be the caſe with all fiſh which come to the ſurface of the water, as the whales muſt do for the purpoſe of reſpiration. It has alſo been obſerved that they are more cloſely allied to quadrupeds than to fiſh. They have in many reſpects the peculiar ſtructure and economy of parts which belong to this claſs of animals. They are furniſhed with lungs, breathe air, and have warm blood.

100 Allied to quadrupeds

101 Fitted for rapid motion.

This tribe of animals is peculiarly fitted by their external form for dividing the water in progreſſive motion, and for moving with conſiderable velocity. And on account of the uniformity of the element in which they live, the form of their bodies is more uniform than in animals of the ſame claſs that live on land.

The

Anatomy and Physiology.

The form of the head is commonly a cone or inclined plane. The ſpermaceti whale is an exception to this, in which it terminates in a blunt ſurface. The head is larger in proportion to the body than in quadrupeds, and ſwells out laterally at the articulation of the lower jaw. This ſeems to be of advantage to the animal in catching its prey, as there is no motion of the head on the body.

102 Form of the head;

Behind the pectoral fins, at the inſertion of which the circumference is greateſt, the body gradually diminiſhes to the ſpreading of the tail. The body is flattened laterally; and it would appear that the back is ſharper than the belly, which is nearly flat.

103 of the body.

The progreſſive motion of the animal is performed by the tail, which moves the broad termination or lobes, operating in the ſame manner as an oar in ſculling a boat. And for the purpoſe of preventing any obſtruction in moving through the water, it may be obſerved that all the external parts of the claſs mammalia, that live on land, are either entirely wanting, or are concealed under the ſkin in cetaceous fiſhes.

104 Power of the tail.

Sect. I. *Of the Bones.*

The bones alone, Mr Hunter obſerves, when properly united into the ſkeleton, in many animals give the general ſhape and character. But this is not ſo decidedly the caſe in this order of animals. In them the head is immenſely large, the neck ſmall, there are few ribs, in many a very ſhort ſternum, and no pelvis, with a long ſpine terminating in a point, ſo that theſe bones being merely joined together do not afford any idea of the regular ſhape of the animal. The different parts of the ſkeleton are ſo encloſed, and the projecting ſpaces between the parts ſo filled up, that they are altogether concealed, and give to the animal externally an uniform and elegant form.

105 The ſkeleton gives no idea of the general form.

The great ſize of the bones of the head leaves but a ſmall cavity for the brain. In the ſpermaceti whale it is not eaſy to diſcover where the cavity of the ſkull lies. This is alſo the caſe with the large whalebone and bottle-noſe whale. In the porpoiſe, the ſkull conſtitutes the principal part of the head. For the brain is found to be conſiderably larger in proportion to the ſize of the animal. The bones of one genus differ very much from thoſe of another. In the ſpermaceti and bottle-noſe whales, the grampus and the porpoiſe, the lower jaws, eſpecially at the poſterior ends, reſemble each other; but in others it is very different. The number of particular bones is alſo obſerved to vary very much.

106 Bones of the head;

Vertebræ.—The piked whale has ſeven vertebræ in the neck, 12 in the back, and 27 to the tail. This makes the whole number 46. In the porpoiſe the cervical vertebræ are ſeven in number. There is one common to the neck and back, 14 proper to the back, and 30 to the tail, making in whole 51. The cervical vertebræ of a bottle-noſe whale, were the ſame in number as thoſe of the porpoiſe. There were 17 in the back and 37 in the tail, which makes the whole number 60. Four of the vertebræ of the neck in the porpoiſe are anchyloſed, or have grown together. The atlas in every one of this order of animals that has been examined is the thickeſt of the vertebræ. It ſeems to be compoſed of two. There is no articulation between the firſt and ſecond vertebræ of the neck to admit of rotatory motion. The vertebræ of the neck are very thin, ſo that the diſtance between the head and ſhoulders is as ſhort as poſſible.

107 of the neck and back;

Anatomy and Physiology.

Sternum, or *Breaſtbone.*—This is very flat in the piked whale, and conſiſts of a ſingle very ſhort bone. The breaſtbone of the porpoiſe is conſiderably longer: it is compoſed of three bones, which are of ſome length in the ſmall bottle-noſe whale. The firſt rib of the piked whale, and the three firſt of the porpoiſe are articulated to the ſternum.

108 of the breaſt.

Ribs.—The ſmall bottle-noſe whale diſſected, by Mr Hunter, had 18 ribs on each ſide; and the porpoiſe had 16. Fifteen ribs have been reckoned in the ſkeleton of the dolphin. A large whalebone whale had 15 ribs on each ſide, which were 21 feet long and 18 inches in circumference. The ſpermaceti whales which were thrown aſhore on the coaſt of Brittany in France, had only 8 ribs on each ſide. They were 5 feet long and 6 inches in circumference.

109 Ribs

The ends of the ribs that have two articulations, in the whole of this tribe, Mr Hunter obſerves, are articulated with the body of the vertebræ above, and with the tranſverſe proceſſes below, by the angles, ſo that there is one vertebra common to the neck and back. In the large whalebone whale the firſt rib is bifurcated, and conſequently is articulated with two vertebræ.

110 articulated with two vertebræ.

Pectoral or *lateral fins.*—Theſe are analogous, and ſomewhat ſimilar in conſtruction to the anterior extremities of quadrupeds. They are compoſed of a ſcapula or ſhoulder-blade, os humeri, ulna, radius, carpus, and metacarpus, which laſt may include the fingers, the number of bones being ſuch as may be reckoned fingers, although they are included in one general covering. The number of bones in each is different, the fore-finger has five, the middle and ring-finger has ſeven, and the little finger has four. Theſe bones are not articulated by capſular ligaments as in quadrupeds, but by intermediate cartilages attached to each bone. Theſe cartilages are nearly equal in length to one half of the bone. This conſtruction gives firmneſs and a conſiderable degree of pliability to the whole.

111 Pectoral fins ſimilar to the extremities of quadrupeds

Teeth.—Of this tribe of animals ſome have teeth in both jaws, ſome have them only in one, while there are others which have none at all. The teeth cannot be divided into claſſes as in quadrupeds. They are all pointed teeth, and are pretty much ſimilar in form and ſize. Each tooth is a double cone, one part of which is faſtened in the jaw, and the other projects above the gum. In ſome, indeed, the fang is flattened and thin at the extremity; and in others it is curved.

112 Teeth

The formation of the teeth, and their progreſs afterwards, ſeems to be different from that of quadrupeds. For they ſeem to form in the gum, ſo that they muſt either extend and ſink into the jaw, or the alveoli muſt riſe to encloſe them. Mr Hunter thinks this laſt the moſt probable, ſince the depth of the jaw is increaſed, ſo that the teeth ſeem to ſink deeper and deeper in it. This mode of formation is obſerved in jaws that are not fully grown; for, as happens in other animals, the teeth increaſe in number as the jaw lengthens.

113 formed differently from quadrupeds.

It does not appear that they ſhed their teeth, or have

114 Are not ſhed.

Anatomy and Physiology.

have new ones formed similar to the old. This indeed seems scarcely possible from the situation in which they are originally formed.

115 Peculiar substance.

Whalebone.—This is a substance peculiar to the whale. It is of the same nature as horn. It is therefore entirely composed of animal matter, and is extremely elastic. The name of bone is undoubtedly improper, as it has no earthy matter in its composition; but as it has been commonly employed we shall still retain it.

116 Two kinds.

There are two kinds of whalebone. One kind is got from the large whale; the other from a smaller species. It is placed in the inside of the mouth, and is attached to the upper jaw. It consists of thin plates of different sizes in different parts of the mouth. The length and the breadth of the whalebone, although not always, in general correspond pretty nearly; those plates that are longest being also the broadest.

117 Arrangement.

These plates are arranged in several rows on the outer edge of the upper jaw, similar to the teeth in other animals, and stand parallel to each other, one edge being towards the circumference of the mouth, and the other towards the inside. They are placed at unequal distances in different parts of the mouth. In the piked whale, they are only one-fourth of an inch asunder at the greatest distance. In the great whale the distances are greater.

118 Outer row.

The longest plates are in the outer row; and the length is proportioned to the different distances between the different parts of the jaws. Some of them are 14 or 15 feet long, and 12 or 15 inches broad. Towards the anterior and posterior part of the mouth they are very short. They rise for half a foot or more of the same breadth, and afterwards shelve off from the inside till they come nearly to a point at the outer. The exterior of the inner rows are the longest, corresponding to the termination of the declivity of the outer, and become shorter and shorter, till they hardly rise above the gum.

119 Inner row.

The inner rows are closer than the outer, rise almost perpendicularly from the gum, are longitudinally straight, and have less declivity than the other. The plates of the outer row make a serpentine line laterally, and in the piked whale the outer edge is the thickest. Round the line made by their outer edges runs a small white bead, which is formed along with the whalebone, and wears down with it; both edges of the smaller plates are nearly of the same thickness. In all

120 Hair.

of the plates, the termination is in a kind of hair, as if the plate were divided into innumerable small parts. The exterior plates have the strongest and also longest.

The whole surface of the mouth resembles the skin of an animal covered with strong hair; and under this surface the tongue lies when the mouth is shut. In the piked whale the projecting whalebone remains entirely on the inside of the lower jaw, when the mouth is shut, because the jaws meet everywhere along their surface. Mr Hunter is at a loss to explain how this is effected in large whales, in which the lower jaw is straight, forming a horizontal plane; but the upper-jaw being an arch, cannot be hid by the former. He therefore supposes that a broad upper-lip reaches to the lower jaw and covers the whole.

The formation of the whalebone is in one respect similar to that of horn, hair, &c. but it has another mode of growth and decay which is peculiar. The plates form upon a thin vascular substance, which does not immediately adhere to the jaw-bone; but which has a more dense vascular substance between. From this substance thin broad processes, corresponding to each plate, are sent out; and on these processes the plate is formed, in the same way as the horn on the bony cone, or the tooth on the pulp. Each plate is necessarily hollow at the growing end, and the first part of the growth takes place on the inside of the hollow. But besides this mode of growth, it receives additional layers on the outside, which are formed on the vascular substance extended along the surface of the jaw. This part also forms upon it a kind of horny substance between each plate, which is very white, rises with the whalebone, and becomes even with the outer edge of the jaw, and the termination of its outer part forms the bead above mentioned. This intermediate substance fills up the space between the plates, as high as the jaw, and is similar to the alveolar processes, keeping them firm in their places.

Anatomy and Physiology.

121 Formation peculiar.

As both the whalebone and the intermediate substance are constantly growing, a determined length must be supposed necessary, so that there must be a regular mode of decay established, which does not depend intirely on chance or accidental circumstances. In its growth there seems to be a formation of three parts; one from the rising cone, which is the center, a second on the outside, and a third being the intermediate substance. These appear to have three stages of duration; for that which forms on the core, it is supposed, makes the hair; and that on the outside makes principally the plate of the whalebone; and this, when got a certain length, breaks off, leaving the hair projecting, becoming at the termination very brittle; and the third or intermediate substance, by the time it rises as high as the edge of the skin of the jaw, decays and softens away.

The use which has been ascribed to the whalebone, is principally for the retention of the food till it is swallowed; for it is supposed that the fish which are taken by the species of whale having this peculiar construction of the mouth, are small when compared with its size.

Plate CXLI. fig. 3, 4, 5.

Sect. II. *Of the Skin and Muscles.*

122 Cuticle.

The cuticle, or scarf-skin, in this order of animals, is similar to that on the sole of the foot in the human species. It seems to be composed of a number of layers, which may be separated by slight putrefaction. Mr Hunter suspects that this arises from a succession of cuticles being formed. The fibres of the cuticle appear to have no particular direction. It has no elasticity, but is easily torn asunder. The internal layer is tough and thick, and in the spermaceti whale, the external surface resembles coarse velvet. The cuticle gives the colour to the animal. In parts that are dark, a dirty-coloured substance has been washed away in separating the cuticle from the true skin. This seems to be the *rete mucosum*.

123 True skin.

The cutis or true skin in cetaceous fishes is extremely villous in the external surface, corresponding to the rough surface of the cuticle, and forming ridges in some

Anatomy and Physiology.

ſome parts. The villi, which are ſoft and pliable, float in water, and are obſerved to be longer or ſhorter in proportion to the ſize of the animal. In ſome they are one-fourth of an inch in length, and in all they are very vaſcular.

The cutis ſeems to be the termination of the cellular membrane of the body more cloſely united, having ſmaller interſtices, and becoming more compact. In fat animals the diſtinction between ſkin and cellular membrane is ſmall, the gradation from the one to the other being almoſt imperceptible; for the cells of both membrane and ſkin being loaded with fat, the whole ſeems to be one uniform ſubſtance. A looſe elaſtic ſkin would appear to be improper in this tribe of animals; it is therefore always on the ſtretch by the adipoſe membrane being loaded with fat. In ſome places, indeed, where it ſeems to be neceſſary, it poſſeſſes conſiderable elaſticity, as at the ſetting on of the fins, and under the jaw, round the opening of the prepuce, the nipples, &c. to allow free motion in theſe parts, where it is obſerved that there is more reticular and leſs adipoſe membrane.

In the piked whale there is a very ſingular inſtance of an elaſtic cuticular contraction. The whole ſkin of the fore part of the neck and breaſt, and as far down as the middle of the belly, is extremely elaſtic; but it receives an increaſed lateral elaſticity by being ribbed longitudinally. It is not eaſy to ſay why this part which covers the thorax ſhould poſſeſs ſo much elaſticity, for this part of the body cannot be increaſed in ſize.

124 Muſcles. The fleſhy or muſcular parts of cetaceous fiſhes reſemble that of moſt quadrupeds. Perhaps it comes nearer to that of the bull or horſe than to that of any other animal. Some of the fleſhy parts are very firm; and about the breaſt and belly they are mixed with tendons.

125 Tendons The body and tail of this tribe of animals are compoſed of a ſeries of bones conected together, and moved as in fiſh; but the movements are produced by long muſcles, with long tendons. This renders the body thicker, and the tail at its ſtem ſmaller, than any other ſwimming animal.

The depreſſor muſcles of the tail, which are ſimilar in ſituation to the pſoæ, make two very large ridges on the lower part of the cavity of the belly, riſing much higher than the ſpine, and the lower part of the aorta paſſes between them. Theſe two large muſcles go to the tail, which may be conſidered as the two poſterior extremities united in one.

The muſcles of cetaceous animals loſe their fibrous ſtructure a very ſhort time after death, and become as uniform in texture as a maſs of clay, and even ſofter. This change, no doubt ariſes from incipient putrefaction, although no evidence of this proceſs being begun is to be had from any offenſive ſmell. This change is moſt remarkable in the large muſcles, as thoſe of the back and the pſoæ muſcles.

The Tail.—The conſtruction of the tail affords an inſtance of a ſingular piece of mechaniſm. It is compoſed of three layers of tendinous fibres, which are covered with the cutis and cuticle. Two of theſe layers are external; the other is internal. The direction of the fibres of the external layers is the ſame as in the tail, forming a ſtratum about one third of an inch thick; but varying, as the tail is thicker or thinner. The middle layer is compoſed entirely of tendinous fibres, paſſing directly acroſs between the two external layers, their length being in proportion to the thickneſs of the tail. This ſtructure gives amazing ſtrength to this part of the animal.

Anatomy and Physiology. 126 very ſtrong

The ſubſtance of the tail is ſo firm and compact, that the veſſels remain in their dilated ſtate, even when they are cut acroſs. This ſection conſiſts of a large veſſel, ſurrounded by as many ſmall ones, as can come in contact with its external ſurface. The fins are merely covered with a ſtrong condenſed adipoſe membrane.

Sect. III. *Of the Organs of Digeſtion and Excretion.*

127 Gullet. In the whale, the œſophagus begins at the fauces, as in other animals. At the beginning it is circular, but is ſoon divided into two paſſages by the epiglottis croſſing it. Paſſing down in the poſterior mediaſtinum, to which it is attached by a broad part of the ſame membrane, its anterior ſurface makes the poſterior part of a cavity behind the pericardium. Having paſſed through the diaphragm, it enters the ſtomach, and is lined with a very thick, white, and ſoft cuticle, which is continued into the firſt cavity of the ſtomach. The inner, or true coat of the œſophagus is white, and of conſiderable denſity, but it is not muſcular; for it is thrown into large longitudinal folds, by the contraction of the muſcular fibres. This coat is very glandular; many orifices of glands, eſpecially near the fauces, are viſible. The œſophagus is larger than it is in quadrupeds, in proportion to the bulk of the animal, but of leſs ſize than it uſually is in fiſh. One in the piked whale that was meaſured, was three inches and a half wide.

128 Stomach and inteſtines. The ſtomach, as in other animals, lies on the left ſide of the body, and terminates in the pylorus towards the right. The duodenum paſſes down on the right ſide, as in the human body, lies on the right kidney, and then paſſes to the left ſide, behind the aſcending part of the colon and root of the meſentery, comes out on the left ſide, and getting on the edge of the meſentery, becomes a looſe inteſtine, forming the jejunum. In this courſe behind the meſentery, it is expoſed as in moſt quadrupeds. The jejunum and ileum paſs along the edge of the meſentery downwards, to the lower part of the abdomen. The ileum, near the lower end, makes a turn towards the right ſide, mounts upwards round the edge of the meſentery, paſſes a little way on the right, as high as the kidney, and there enters the colon or cæcum. The cæcum, which is about ſeven inches long, and reſembles that of the lion or ſeal, lies on the lower end of the kidney, conſiderably higher than in the human body; and this renders the aſcending part of the colon ſhort. The colon paſſes obliquely up the right ſide, a little towards the middle of the abdomen; and when as high as the ſtomach, croſſes to the left, and acquires a broad meſocolon. It lies here on the left kidney, and in its paſſage down inclines more and more to the middle line of the body. When it has reached the lower part of the abdomen, it paſſes behind the uterus, and along the vagina in the female; between the two teſticles, and behind the bladder and root of the penis in the male; bending down, to open on what is called the belly of the animal. In its whole courſe

Anatomy and Physiology.

course it is gently convoluted. In those which have no cæcum, and, therefore, can hardly be said to have a colon, the intestine, before its termination in the rectum, makes the same kind of sweep round the other intestines, as the colon does where there is a cæcum.

For the size of the animal, the intestines are not large. In those of 18 or 24 feet long, they are not larger than in the horse; the colon is very short, and has little more capacity than the jejunum and ileum. This is a circumstance common to carnivorous animals. In the piked whale, the length from the stomach to the cæcum is 28½ yards, the length of the cæcum seven inches, and of the colon to the anus, two yards and three quarters.

The teeth, in the ruminating tribe of animals, point out the kind of stomach, cæcum, and colon; but in others, as the horse, lion, &c. the appearances of the teeth only indicate the kind of colon and cæcum. In the cetaceous tribe of fishes, whether they have teeth or not, the stomachs vary little, and the circumstance of cæcum seems not to depend on either teeth or stomach.

The stomach, in all the subjects examined by Mr Hunter, consisted of several bags continued from the first on the left, towards the right, where the last terminates in duodenum. The number and size of the stomachs differ considerably. In the porpoise, grampus, and piked whale, there are five; in the bottle-nose whale, seven. The two first stomachs in the porpoise, bottle-nose, and piked whale, are the largest; the others are smaller, but not uniformly so.

129 Number of stomachs.

130 First.

The first stomach has very much the shape of an egg with the small end downwards, and is lined with a continuation of the cuticle from the œsophagus. In some, the œsophagus enters the upper end of the stomach; in others, it enters posteriorly and obliquely.

131 Second.

The second stomach in the piked whale is very large, and rather longer than the first, is of the shape of the Italic letter *S*, and passes out from the upper end of the first on its right side, by nearly as large a beginning as the body of the bag. In the porpoise, where this second stomach begins, the cuticle of the first ends. The inside of the second stomach has unequal rugæ like an irregular honey-comb. In the piked whale the rugæ are longitudinal, and in many places deep, some of them being united by cross bands: in the porpoise the folds are thick, massy, and indented into each other. This stomach opens into the third by a round contracted orifice.

132 Third.

The third stomach is the smallest, appears only to be a passage between the second and fourth, has no peculiar internal structure, and terminates in as large an opening as at its beginning.

133 Fourth.

It is from one to five inches long. The fourth stomach is less than either the first or second. It seems to be flattened between the second and fifth; and in some, as the porpoise, it is long, and passes in a serpentine course like an intestine. The internal surface is regular and villous, and opens on its right side into the fifth.

134 Fifth.

The fifth stomach is round in the piked whale; in the porpoise it is oval: it is small, and terminates in the pylorus without any appearance of a valvular structure. Its coats are thinner than those of the fourth; the internal surface is even, and it is commonly tinged with bile. In some, as the piked whale and the large whalebone whale, there is a cæcum; in others, as the porpoise, grampus, and bottle-nose whale, it is wanting.

Anatomy and Physiology.

The structure of the inner surface of the intestine is very singular. The inner surface of the duodenum of the piked whale has longitudinal rugæ or valves, at some distance from each other, and receiving lateral folds. The inner coat of the ileum and jejunum appears in irregular folds, which may vary according to the action of the muscular coat of the intestine, yet do not seem to depend entirely on this contraction. In some the whole track of the intestine is thrown into large cells which are subdivided into smaller. These cells have the appearance of pouches with the mouths downwards, and act like valves when any thing is attempted to be passed in a contrary direction.

135 Resembles the human.

Liver.—In this tribe of animals there is a considerable degree of uniformity in the liver, which in shape bears a near resemblance to the human liver, but is probably less firm in its texture. The right lobe is the largest and thickest, and there is a large fissure between the two lobes in which the round ligament passes. Towards the left the liver is much attached to the stomach. The gall-bladder is wanting; but the hepatic duct, which enters the duodenum about seven inches beyond the pylorus, is large.

136 Situation.

Pancreas.—The pancreas is a long flat body, having its left end attached to the right side of the first cavity of the stomach. It crosses the spine at the root of the mesentery, joins the hollow curve of the duodenum near to the pylorus, adheres to that intestine, and its duct enters that of the liver near the termination in the gut.

137 Small.

Spleen.—The spleen, which is involved in the epiploon, is small for the size of the animal. In some of the tribe, as in the porpoise, there are one or two small ones, not larger in size than a nutmeg, and sometimes smaller. They are placed in the epiploon behind the others.

138 Conglomerated.

Kidneys.—The kidneys in this whole tribe of animals are conglomerated. They are made up of smaller parts, which are connected only by cellular membrane, blood-vessels, and ducts. The smaller portions are of a conical figure; the apex is placed towards the centre of the kidney, and the base forms the external surface. Each portion is composed of a cortical and tubular substance, the tubular terminating in the apex, which apex makes the mamilla. Each mamilla has an infundibulum, which is long, and at its beginning wide, embracing the base of the mamilla, and becoming smaller. These infundibula at last unite and form the ureter.

Ureters and *Bladder.*—The ureter comes out of the kidney at the lower end, and passes along to the bladder, which it enters very near to the urethra. The bladder, which is of an oblong shape, is small for the size of the animal. In the female the urethra passes along to the external sulcus or vulva, and opens just under the clitoris, as in the human subject. The *capsulæ renales*, when compared to the human, are small for the size of the animal. They are flat and of an oval figure. They are composed of two substances; of an external substance, which has the direction of its fibres towards the center; and of an internal substance, which is more uniform and has less of the fibrous appearance.

139 Small.

Anatomy and Physiology.

Sect. IV. *Of the Organs of Circulation and Respiration.*

140 Heart large.

1. Circulation.—The heart and blood-vessels, especially the veins, are probably larger in proportion to their size than in the quadruped. The heart is enclosed in its pericardium, and is attached to the diaphragm as in the human body. It is composed of two auricles and two ventricles, is flatter than in the quadruped, and adapted to the shape of the chest. The auricles have a greater number of fasciculæ, passing more across the cavity from side to side, than in many other animals; and besides have considerable muscularity and elasticity. There is nothing peculiar in the structure of the ventricles of the heart, in their valves, in the arteries, or in their distribution, all which have a similarity to other animals where parts are nearly similar.

141 Structure not peculiar.

142 Blood in great proportion.

Animals of this tribe have a greater proportion of blood than any other yet known; and some arteries are apparently intended as reservoirs, where a great quantity of blood is required in any part. There is a network of arteries, formed of the intercostal arteries, and running between the pleura, ribs, and their muscles. The spinal marrow is surrounded with a net-work of arteries in the same manner, especially where it passes out from the brain, where a thick substance is formed by their ramifications and convolutions.

In examining particular parts which bear any relation to the size of the animal, if we have been accustomed to see them in the middle-sized animals, we must behold them with astonishment in animals like the whale, which so far exceed the common bulk. The heart and aorta of the spermaceti whale, for instance, appear of immense size, when we make this kind of comparison. The latter measures a foot in diameter; and the former was too large to be contained in a wide tub. Considering the quantity of circulating fluid in so large a vessel, that probably 10 or 15 gallons of blood are thrown out at a single stroke, and the great velocity with which it moves, the mind must be filled with wonder.

143 Circulation astonishing.

144 Veins.

The veins seem to have nothing peculiar in their structure, if we except the veins in the folds on the skin of the breast, as in the piked whale, where, and in similar places, it was necessary to have the elasticity increased.

145 Red globules in great proportion.

The blood of this order of animals is similar to that of quadrupeds. Mr Hunter seems to think that the quantity of red globules is in larger proportion; and he supposes that this increased quantity of red particles may have some effect in aiding to keep up the animal heat; for as they live in a very cold climate or atmosphere compared with the heat of their bodies, it is readily carried off, and therefore some help of this kind becomes necessary.

The quantity of blood in this tribe of animals is comparatively greater than in the quadruped, and therefore it is probable that it amounts to more than in any known animal. In them too the red blood is carried to the extreme parts of the body, similar to what happens in the quadruped, but different from fish.

2. Respiration.—Some parts of the organs of respiration in animals that live on land seem to be fitted for a compound action, as for instance the larynx, which is adapted both for respiration, deglutition, and sound; but in the whale tribe it seems to be adapted only for respiration.

Anatomy and Physiology.

146 Varieties.

Larynx.—The larynx varies much in structure and size in the different species. It is composed of the os hyoides, thyroid, cricoid, and two arytenoid cartilages. The os hyoides was larger, while the cartilages were much smaller, in the bottle-nose whale of 24 feet long than in the piked whale of 17 feet. In the bottle-nose the os hyoides is composed of three bones, with two whose ends are attached to it, making five in all. In the porpoise it consists of only one bone slightly bent: it has no attachment to the head as in many quadrupeds.

The thyroid cartilage, in the piked whale, is broad from side to side, and has two lateral processes which are long, and pass down the outside of the cricoid, near to its lower end, and are joined to it, as in the human subject. The cricoid cartilage is broad and flat, making the posterior and lateral part of the larynx, and is much deeper behind and laterally than before. The two arytenoid cartilages project much, and are united to each other till near their ends; they are articulated on the upper edge of the cricoid; cross the cavity of the larynx obliquely, and make the passage at the upper part a groove between them. In several of the tribe, the epiglottis makes a third part of the passage, and completes the glottis by forming it into a canal. No thyroid gland has been discovered.

147 Not divided into lobes.

Lungs.—The lungs are two oblong bodies, one on each side of the chest, but are not divided into smaller lobes as in the human subject. They are of considerable length, but not so deep as in the quadruped, from the heart being broad and flat, and filling up the chest. They are increased in size by rising higher up in the chest, and passing farther down on the back. The lungs are extremely elastic in their substance, and have the appearance and consistence of the spleen of an ox. The branches of the bronchiæ which ramify into the lungs, have the cartilages rounded, which seems to admit of greater motion between them.

148 Very elastic.

The pulmonary cells are smaller than in the quadruded, and communicate with each other, which those of the quadruped do not; for by blowing into one branch of the trachea, the whole lungs may be filled.

149 Diaphragm.

The diaphragm has not the same attachments as in the quadruped; because the ribs in this tribe do not complete the cavity of the thorax. The diaphragm is therefore unconnected forwards to the abdominal muscles, which are very strong, being a mixture of muscular and tendinous fibres. The chest is longest in the direction of the animal at the back, by the diaphragm passing obliquely backwards, and reaching low on the spine. The parts immediately concerned in respiration are very strong. This is particularly the case with the diaphragm. This seems necessary, as the animal must enlarge the chest in so dense a medium as water, the pressure of which must be greater than the counter-pressure from the air inspired. And for the same reason, expiration must be easily performed, for the pressure of the water and the natural elasticity of the parts are greater than the resistance of the internal air, so that

Anatomy and Physiology.

that it may be produced without any immediate action of muſcles. In theſe animals the diaphragm ſeems to be the principal agent in inſpiration.

Blow hole, or *paſſage for the air*.—In animals breathing air, the noſe is the paſſage for the air, and the ſeat of the organ of ſmelling; but in ſome of the cetaceous tribe, this ſenſe ſeems to be wanting; in them, therefore, the noſtrils are intended merely for reſpiration. The membranous portion of the poſterior noſtrils is one canal; but in the bony part, in moſt of them, it is divided into two. In thoſe which have it divided, it is in ſome continued double through the anterior ſoft parts, and opens by two orifices; but, in others, it unites again in the membranous part, making externally only one orifice, as in the porpoiſe, grampus, and bottle-noſe whale. At its beginning in the fauces, it is a roundiſh hole, ſurrounded by a ſtrong ſphincter muſcle, which graſps the epiglottis; the canal beyond this enlarges, and opens into the two paſſages in the bones of the head. In the ſpermaceti whale, in which the canal is ſingle, it is thrown a little to the left ſide. After theſe canals emerge from the bones near the external opening, they become irregular, and have ſulci paſſing out laterally, of irregular forms, with correſponding eminences; and the ſtructure of theſe eminences is muſcular and fatty.

150 Noſtrils chiefly intended for reſpiration.

Where there is only one external opening, it is tranſverſe, as in the porpoiſe, grampus, bottle-noſe, and ſpermaceti whale; but when it is double, it is longitudinal, as in the large whalebone whale, and in the piked whale. Theſe openings form a paſſage for the air to and from the lungs; for it would be impoſſible for theſe animals to breathe through the mouth.

Pl. CXLI. fig. 1, 2.

151 Opening well fitted for reſpiration.

In the whole tribe the ſituation of the opening on the upper ſurface of the head is well adapted for the purpoſe of reſpiration; for it is the firſt part that comes to the ſurface of the water in the natural progreſſive motion of the animal. The animals of this order do not live in the medium which they breathe. This requires a particular conſtruction of the organs which conduct the air to the lungs, that the water in which they live may not interfere with the air they breathe. The projecting glottis paſſes into the poſterior noſtrils, by which means it croſſes the fauces, and divides them into two paſſages.

The beginning of the poſterior noſtrils, which anſwers to the *palatum molle* in the quadruped, has a ſphincter which graſps the glottis, by which its ſituation is rendered ſtill more ſecure, and the paſſages through the head, acroſs the fauces and along the trachea, are rendered one continued canal. This union of glottis and epiglottis with the poſterior noſtril making only a kind of joints, admits of motion, and of a dilatation and contraction of the fauces in deglutition, from the epiglottis moving more in or out of the poſterior noſtril. This tribe of animals having no projecting tongue, and therefore wanting its extenſive motion, and the power of ſucking things into the mouth, may perhaps require this peculiarity of conſtruction to render the communication between the air and lungs more perfect. But how far this is the caſe, in the preſent ſtate of our knowlege of the ſtructure and economy of theſe reſpiratory organs, it is not eaſy to ſay.

Sect. V. *Of the Brain and Organs of Senſe.*

Anatomy and Physiology.

The brain.—In the different genera of the cetaceous tribe of animals, the brain differs much, and alſo in the proportion it bears to the bulk of the animal. The porpoiſe has the largeſt brain, and thus comes neareſt to the human ſubject. The whole brain is compact. The anterior part projects leſs forward than in the quadruped; the *medulla oblongata* is leſs prominent, and lies on the hollow made by the lobes of the cerebellum.

152 Not in proportion to the bulk.

The brain is compoſed of diſtinctly marked cortical and medullary ſubſtances. The medullary ſubſtance is very white; the cortical like the tubular ſubſtance of the kidney; and theſe two ſubſtances ſeem to be in the ſame proportion as in the human brain. The lateral ventricles are large. They paſs cloſe round the ends of the *thalami nervorum opticorum*. The thalami are large; the *corpora ſtriata* ſmall. Moſt of the other parts have a great reſemblance to ſimilar parts in the human brain.

153 Subſtance fibrous.

The ſubſtance of the brain is more viſibly fibrous than in any other animal. The fibres paſs from the ventricles as from a center to the circumference, and continue through the cortical ſubſtance. The brain of the piked whale weighed four pounds 10 ounces.

154 Spinal marrow.

The ſpinal marrow in this tribe of animals is proportionally ſmaller than in the human ſpecies. It is largeſt in the porpoiſe where the brain is largeſt, bearing ſome proportion to the quantity of brain. But this is not always the caſe; for in the ſpermaceti whale, where the brain is ſmall, the ſpinal marrow is proportionally largeſt. It terminates about the twenty-fifth vertebra, beyond which is the *cauda equina*: the dura mater is no farther continued. The nerves that go off from the ſpinal marrow in its courſe are more uniform in ſize than in the quadruped; the parts being more equal, and no extremities, except the fins, to be ſupplied. The ſtructure of the ſpinal marrow is more fibrous than in other animals; when ſeparated longitudinally, it tears with a fibrous appearance, but when ſeparated tranſverſely, it breaks irregularly.

The ſkull is lined with the dura mater, and in ſome forms the three proceſſes correſponding to the diviſions of the brain, as in the human ſubject: but in others this diviſion is bony. Where the dura mater covers the ſpinal marrow, it differs from what takes place in other animals, for it encloſes the marrow cloſely, and the nerves immediately paſſing out through it at the lower part, as they do at the upper, ſo that the cauda equina as it forms is on the outſide of the dura mater.

155 Nerves.

The nerves going out from the brain are ſimilar to thoſe of the quadruped, excepting in thoſe that want olfactory nerves, as the porpoiſe. As the organs of ſenſe are variouſly formed in different animals, fitted for the different modes of impreſſion, in this tribe the conſtruction is varied according to the economy of the animal. The ſenſes of touch and taſte ſeem to be adapted to every mode; but thoſe of ſmell, ſight, and hearing, probably require to be varied or modified according to circumſtances; and according to theſe circumſtances the ſenſes are formed.

156 Skin the ſeat of ſenſation.

Senſe of touch.—The ſkin in this tribe of animals appears in general to be well calculated for ſenſation.

Anatomy and Physiology.

The whole surface is covered with villi, which are so many vessels, and it must be supposed also nerves. Whether this structure be only necessary for acute sensation, or whether it be necessary for common sensation, is not known. But it may be observed, that where the sense of touch is required to be acute, the villi are usually thick and long; and this is probably necessary, because in these parts of the body where the sensations of touch are acute, such parts are covered with a thick cuticle. This is remarkably the case in the ends of our fingers and toes, and in the foot of the hoofed animals. Mr Hunter seems to think that the sense of touch possesses greater acuteness in water.

157 Tongue not merely the organ of taste.

Sense of taste.—The tongue in most animals is not only the organ of taste, but is also intended for mechanical purposes. For this latter purpose it is perhaps less so than in any other animal. In some it has more freedom of motion than in others; and the reason of this is probably the difference in the mode of catching the food and of swallowing. In those with teeth it projects most, which seems less necessary in others which merely open the mouth to receive the food along with the water, or swim upon it. In the porpoise and grampus, the tongue is firm in texture; but in the spermaceti whale it resembles a feather bed. It is composed of muscle and fat; and in some is pointed and serrated on the edges.

158 Wanting in some.

Sense of smelling.—In many of this tribe there is no organ of smell at all; and in those which have such an organ, it is not that of a fish, and therefore, like theirs it is probably not calculated to smell water. It becomes a matter of difficulty to account for the manner in which such animals smell water, and why others have no such organ, which is supposed to be peculiar to the large and small whalebone whales. Mr Hunter is of opinion that the air retained in the nostril out of the current of respiration, which by being impregnated with the odoriferous particles contained in the water during the act of blowing, is applied to the organ of smell. It might be supposed, he observes, that they would smell the air on the surface of the water by every inspiration as animals do on land; but admitting this to be the case, it will not give them the power to smell the odoriferous particles of their prey in the water at any depth; and as their organ is not fitted to be affected by the application of water, and as they cannot suck water into the nostrils without the danger of its passing into the lungs, it cannot be by its application to this organ that they are enabled to smell. Some have the power of throwing the water from the mouth through the nostril, and with such force as to raise it 30 feet high. This no doubt answers some very important purpose, although not very obvious. Mr Hunter supposing that smelling the external air could be of no use as a sense, thinks that they do not smell in inspiration; for the organ of smell is out of the direct road of the current of air in inspiration, and it is also out of the current of water when they spout; may it not then be supposed, he asks, that this sinus contains air, and as the water passes in the act of throwing it out, that it impregnates this reservoir of air, which immediately affects the sense of smell? This operation is conjectured to be performed in the act of expiration; because then the water is said to be very offensive. Mr Hunter adds, that if this solution be well founded, those only can spout which have the organ of smell. But as some animals of this order are entirely deprived of this organ, and as the organ in those which have it is extremely small, as well as the nerve which receives the impression, it would appear to be less necessary in them than in those which live in air.

Anatomy and Physiology.

159 Similar to quadrupeds.

Sense of hearing.—The internal ear in general has nearly the same construction as that of quadrupeds. The bones, the cavities, the cartilages, and the nerves are the same, their disposition and arrangement varying in some of the species; and from this there arises a difference of structure in these organs, and perhaps also a difference in the sensation. According to some anatomists, the semicircular canals are wanting in some of this tribe of animals; while they have been described by others. Some have described the form of the vestibulum as in the spermaceti whale, others have denied its existence altogether. It is perhaps owing to their being less easily detected, that they have been supposed not to exist at all. According to the relations of fishermen, the cetaceous tribe have the sense of hearing as acute as that of quadrupeds.

160 Is small.

Sense of seeing.—The organ of sight in this tribe seems to have a very close analogy with the same organ in quadrupeds. There is the same relative connection between the choroid coat, the retina, and the crystalline humour. In some circumstances, however, they differ, by which probably, the eye in this tribe is better adapted to see in the medium through which the light is to pass. The eye for the size of the animal is small; from which it is conjectured that their power of motion is not great. As no observations have yet been made on the form, size, and density of the different humours of the eye, any thing we could add would be mere conjecture founded on vague analogy.

Sect. VI. *Of the Organs of Generation, &c.*

161 Structure similar to those of ruminating animals.

If the cetaceous tribe of animals come near to fishes in some points of resemblance, they are very different in those of others. This is remarkably the case in the structure of the organs of generation, in which they come nearer in form to those of ruminating animals, than of any other; and this similarity is more striking in the female, than in the male; for the situation must vary in the latter on account of external circumstances.

162 Male.

In the male the testicles remain in the situation in which they were formed, as in those quadrupeds in which they never come down into the scrotum. They are situated near the lower part of the abdomen, one on each side, upon the two great depressors of the tail; and at this part they come in contact with the abdominal muscles anteriorly. The vasa deferentia pass directly from the epididymis behind the bladder, or between it and the rectum, into the urethra. The vesiculæ seminales are wanting. The structure of the penis is nearly the same as that of the quadruped. The erectores penis, which have a similar insertion to those of the human subject, as well as the acceleratores, are very strong muscles.

163 Female.

These organs in the female consist of the external opening of the vagina, the two horns of the uterus, Fallopian tubes, fimbriæ, and ovaria. The external opening is a longitudinal slit, whose edges meet in two

opposite

Anatomy and Physiology.

opposite points forming a kind of sulcus. The vagina passes upwards and backwards in a diagonal direction, respecting the cavity of the abdomen, and then divides into the two horns, one on each side of the loins. These afterwards terminate in the Fallopian tubes, to which the ovaria are attached. The inside of the vagina is smooth for about one half of its length, and then begins to form something similar to valves projecting towards the mouth of the vagina, each like an *os tincæ*. These are from six to nine in number. They hardly go quite round where they first begin to form, but the last make complete circles; and at this place the vagina becomes smaller, and continues gradually to decrease in width to its termination. From the last projecting part the passage is continued up to the opening of the two horns; and at this place the inner surface forms longitudinal rugæ, which stretch into the horns.

The Fallopian tubes, at their termination in the uterus, are for some inches remarkably small, they then begin to dilate suddenly; and this dilatation increases, till at the mouth they are five or six inches in diameter. Through their whole length they are full of longitudinal rugæ. The ovaria are oblong bodies about five inches in length; one end is attached to the end of the Fallopian tube, and the other to the horn of the uterus. They are irregular in the external surface, and have no capsule but what is formed by the Fallopian tube.

In what position the act of copulation is performed, does not seem to be precisely ascertained. The Greenland fishermen say, that they are then erect in the water, the heads being above the surface, and embracing each other with the fins. M. de St Pierre, during the course of a voyage to the Isle of France, asserts, that he saw them several times in this position. Others as confidently affirm, that the female throws herself on her back; but it would appear, that this position must interfere with the act of respiration, which cannot be for any length of time suspended; and, therefore, that it is less probable.

164 Bring forth one at a time, once in two years.

It is conjectured, that the female admits the male only once in two years, and that the time of gestation is nine or ten months. It is probable too, that having only two nipples, they bring forth only a single young one at a time.

165 Mammæ.

The glands for the secretion of milk, or the breasts, are two, one on each side of the middle line of the belly at its lower part. The posterior ends from which the nipples proceed, are on each side of the opening of the vagina in small furrows. They are flat bodies lying between the external layer of fat and the abdominal muscles, and are of considerable length, but only one fourth of that in breadth. There is a large trunk which runs through the whole length of the gland, and appears to serve the purpose of a reservoir for the milk. Into this trunk the lateral and smaller ducts enter, some with the course of the milk, some in a contrary direction. The trunk terminates in a projection externally which encloses the nipple.

166 Process of sucking.

It seems difficult at first sight to conceive in what way the process of sucking is performed; so that both the mother and the young one may at the same time respire freely. According to the relations of the Greenland fishermen, the mother throws herself on her side, and the young one then seizes the nipple. In this position, the smallest motion of the body permits the mother or the young one to enjoy the advantage of respiration. The art of sucking, must be different from that of land animals, for in them it is performed by drawing the air from the mouth backward into the lungs, which the fluid follows by the pressure of the external air on its surface; but, in the cetaceous tribe, the lungs have no connexion with the mouth. The operation of sucking must therefore be performed by the action of the mouth itself, and by its having the power of expansion.

Anatomy and Physiology.

167 Milk rich.

The milk of the whale is supposed to be very rich. In the one which was taken near Berkeley with its young one, the milk was tasted by Mr Jenner and Mr Ludlow. By their account, it had the richness of cows milk to which cream had been added.

The young whale, according to Dudley, continues to suck for a year. They are then called *short-heads* by the fishermen, and are extremely fat, some yielding 50 tons of fat. The mothers, at the same period, are very lean. At the age of two years, they are called *stunts*, because they are supposed to be dull after being weaned. The quantity of fat which they then yield is from 24 to 28 tons. After this period, they come under the denomination of *skull-fish*, when their age can only be guessed at by the length of hair at the terminations of the whalebone.

168 Affection for its young.

The affection and attachment which the whale discovers for its young, have been much celebrated by naturalists. Perhaps it is magnified by the comparison between the whale and fishes living in the same element, the care of whose offspring is totally disregarded by the parent, and left, which indeed is all that is necessary, to the influence of heat and air to bring forth from the ova or spawn deposited by the mother. This attachment is probably, after all, not more remarkable than in other animals which suckle their young, and bring forth a small number, or only one at a time.

Sect. VII. *Of the Food of the Whale; the Size, Abode, Fat, &c.*

169 Different kinds of fish.

Food.—The food of the whole cetaceous tribe is supposed by naturalists, to be fish, each probably having some particular kind. Some hundreds of the beaks of cuttle-fish were found by Mr Hunter, in the stomach of the bottle-nose whale; in the stomach of the piked-whale, bones of different fish, but particularly those of the dog-fish; and, in the grampus, the tail of a porpoise.

Considering the capacity of the œsophagus, we must conclude, that they do not swallow fish so large in proportion to their size as many fish do; for it is observed, that fish often attempt to swallow more at a time than what the stomach will hold; so that part must remain in the œsophagus till the rest is digested.

170 Of the large whale.

The food of the large whalebone whale is supposed to be small fish, sometimes crab-fish and shell-fish. It may appear strange, that so large an animal should be able to find a quantity of food sufficiently great for its subsistence, and to preserve it with such a covering of fat as they are generally found to have. But this wonder ceases, when it is considered that the very food they

Anatomy and Physiology

they ſeek after, is found in the greateſt abundance in thoſe regions which they uſually inhabit. In the economy of the whalebone whale, this ſubſtance, from which it derives its name, ſeems to be of particular uſe; for as it appears that they live on ſmall fiſh, which they probably receive into the mouth in great numbers, it was neceſſary that there ſhould be ſome contrivance to retain them in the mouth till they are ſwallowed; and this purpoſe is fully anſwered by the whalebone.

171 Northern whale.

The northern whale, or the north-caper, lives on mackerel, herrings, cod-fiſh, and tunny-fiſh. Horrebow mentions, that the Icelanders found in the ſtomach of an individual of this ſpecies, which came on ſhore in purſuit of its prey, no leſs than 600 living cod-fiſh, beſides a great number of pilchards, and ſome aquatic birds. This account is probably exaggerated, at leaſt with regard to the number of fiſh in the ſtomach being alive. The other ſpecies belonging to this genus uſually feed on the herring, the arctic ſalmon, and the ſand-eel.

172 Narhwal.

The narhwal, or unicorn whale, is ſaid to live chiefly on the different ſpecies of actinia. It is unprovided with teeth to ſeize its prey; but, according to ſome naturaliſts, it can employ the long tooth, which proceeds from the upper jaw to entangle theſe fiſhes; and having collected them in this manner to the edge of the lips, it ſucks them into the mouth and deſtroys them, by conſtantly ſtretching the tongue along the lips.

173 Spermaceti whale.

The ſpermaceti whales purſue the ſeal, the dolphin, and the pike-headed whale. The large ſpermaceti whale purſues, with great avidity, the ſhark, which is ſaid to be his ordinary food; and this animal, otherwiſe ſo formidable, is ſeized with ſuch a panic at the ſight of this terrible enemy, that he conceals himſelf in the mud, or under the ſand; ſometimes ſeeing himſelf ſo aſſailed on all ſides, he darts acroſs the rocks, and ſtrikes them with ſuch force and violence as to occaſion his own death. This terror, according to Fabricius, is ſo ſtrongly impreſſed, that the ſhark, which is ſo greedy of the carcaſes of the other cetaceous fiſhes, dares not even approach the dead body of the large ſpermaceti whale.

174 Blackheaded ſpermaceti whale.

The phyſeter microps is ſaid to prey chiefly on the ſeal. When the ſeals are in numbers together, and find themſelves attacked by their enemy, they make a precipitate retreat. Some gain the ſhore; while others climb on a piece of ice; and then, if the whale be alone, he conceals himſelf under the ice, and waits till the ſeal return to the water, when he ſeizes his prey. But if ſeveral whales have joined in the purſuit, as frequently happens, it is ſaid that they ſurround the maſs of ice, and overturn it in the water.

175 Dolphin.

The dolphin genus feed on cod-fiſh, flat-fiſh, ſuch as the turbot, and many other kinds of fiſh of moderate ſize. The grampus is the boldeſt, the ſtrongeſt, and the moſt voracious of any belonging to this tribe of animals. It is agreed by almoſt all naturaliſts, that the grampus will even attack the great whale and put him to flight, which is ſaid to be the reaſon that they are ſometimes thrown aſhore on our coaſts.

176 60 feet.

Size of the whale.—The whale is now rarely ſeen to exceed 60 feet in length, by 36 feet in circumference. A whale, which landed in the iſland of Corſica in 1620, was one of the largeſt which has been known for ſome centuries. It meaſured 100 feet in length. But although this be an enormous bulk, it falls far ſhort of the magnitude of the whale, as it has been deſcribed by ancient naturaliſts, exiſting in their time. But probably theſe relations will gain little faith, even from the moſt credulous of the preſent day, in which Pliny ſpeaks of the whale being 960 feet long; and in another place, the ſame naturaliſt ſays, that Juba writes to C. Cæſar, the ſon of Auguſtus, that ſome whales of 600 feet in length, and 360 in circumference, had entered the rivers of Arabia.

Anatomy and Physiology.

177 Formerly larger.

But whatever credit is to be given to theſe ſtories, there is little doubt that the whales in the northern ocean were formerly of much greater bulk than they now are; and the reaſon ſeems to be, that being leſs diſturbed when this fiſhery was leſs frequented, they arrived at a greater age, and conſequently acquired a greater ſize.

178 Reaſon.

179 More frequent in the ocean formerly.

Abode of the whale.—According to the teſtimony of the ancient naturaliſts, the whale was more frequently ſeen in the ocean than at preſent; for, on account of being diſturbed by the numerous fleets traverſing the ocean, they have retired to the regions of the north, where they are leſs expoſed to the noiſe of the mariners, leſs haraſſed by the fiſhermen, and enjoy that tranquillity which is no longer to be found in their former haunts.

180 Chiefly in the northern ſeas.

The large whalebone whale is moſt frequently found in the Greenland ſeas, Davis ſtraits, and the coaſts of Spitzbergen, Iceland, and Norway; on the coaſts of Labrador, in the gulf of St Lawrence, and round Newfoundland. This whale is alſo found among the Philippine iſlands, near Socotora an iſland on the coaſt of Arabia Felix, and on the coaſts of Ceylon. The whale alſo frequents the Chineſe ſeas; and, if the reports of voyagers are to be implicitly admitted, is found there of an immenſe ſize. The uſual retreat of the ſpermaceti whale is the northern ocean, towards Davis ſtraits, the North Cape, and the coaſts of Finmark. Of all the cetaceous fiſh, this indeed ſeems to lead the moſt wandering life. In the year 1787, this whale was diſcovered in great numbers in an extenſive bay on the ſouthern peninſula of Africa, at the diſtance of 40 leagues from the Cape of Good Hope.

The dolphin family is found in all ſeas; in the ocean, the Mediterranean, the gulf of Meſſina, and the Adriatic ſea, from whence they go into the lagoons of Venice, and to the coaſts of Galicia. On the coaſts of Cochin-China very conſiderable fiſheries are eſtabliſhed, which produce a great quantity of oil.

181 Largeſt fiſhes in northern regions.

We may conclude, that, in general, the great whale and the unicorn-fiſh uſually frequent the ſeas towards the poles, between the 68th and 79th degrees of latitude; and that the other families are found diffuſed more or leſs in the ſeas of more temperate regions. It would appear, from this account of the places which are the ordinary haunt of the whale, that the productions of nature are diſpoſed ſomewhat in a contrary order; ſince we find all the large terreſtrial animals, ſuch as the elephant and rhinoceros, in countries within the torrid zone; while the huge inhabitants of the ocean have fixed their abode in the polar regions.

182 Largeſt land animals in the torrid zone.

Migration

Anatomy and Physiology.

183 Cauſes of.

Migration of the whale.—Although the abode of the whale be generally determined and fixed, yet particular cauſes force them to leave their uſual and natural haunts. The ſeaſon of their amours, a furious ſtorm, the purſuit of a haraſſing enemy, the want of food, or exceſſive cold, often oblige them to migrate. Sometimes they appear ſolitary, ſometimes in conſiderable numbers, according to the nature of the cauſes which have diſturbed and driven them from their ordinary retreats. According to the information of voyagers who have viſited theſe regions, the great whale every year, in the month of November, leaves Davis ſtraits, enters the river St Lawrence, and there brings forth her young, between Camouraſca and Quebec; and from thence, in the month of March following, they regularly return to the polar ſeas.

It appears, that the whale conſtantly remains in the northern ocean, and never leaves it but when the female is to bring forth, or when they are driven away by an enemy. In this laſt caſe they are moſt commonly found ſolitary, at leaſt not more than the male and female, or the mother and the young one.

The ſpermaceti whales, however, ſeem frequently to change their habitation, and to roam about in ſtrange ſeas. This appears, from conſiderable numbers having been thrown aſhore or left dry by the retreating tide at different times. In the year 1690, 200 of this ſpecies were landed near Cairſton in the Orkneys; and, in the year 1784, 31 large ſpermaceti whales came on ſhore on the weſt coaſt of Audierne in Lower Brittany in France.

184 Black-headed whale.

Enemies of the whale.—The greateſt and moſt terrible enemy of the ſmall whale, is the phyſeter microps, or black-headed ſpermaceti whale. As ſoon as he perceives the pike-headed whale, the porpoiſe, and ſome others, he darts upon them, and tears them to pieces with his crooked fangs.

185 Unicorn fiſh.

It is ſaid, that there exiſts a continual and ſettled enmity between the unicorn-fiſh and the great whale; and that they never meet without engaging in combat, in which the whale receives ſo many ſevere, and often deadly wounds, as often to occaſion its death. When the unicorn-fiſh ſtrikes its tooth or horn into the ſide of ſhips, it is ſuppoſed that it is through miſtake, taking the veſſel for its enemy, the whale.

186 White bear.

The white bear, ſo common in Greenland and Spitzbergen, is extremely fond of the fleſh of the cetaceous and other fiſhes. He remains conſtantly on the watch for his prey on a maſs of ice, or on the ſea-ſhore; and as ſoon as he perceives it, he throws himſelf into the water, and plunges to attack it. The large and the ſmall whales are equally the objects of his eager purſuit; but he is not ſucceſsful till after they have loſt a great deal of blood from the wounds which he has inflicted, or they have been exhauſted with fatigue.

187 Saw-fiſh.

Between the ſaw-fiſh and the whale there exiſts a conſtant warfare. It is related by all the fiſhermen, that the whale and ſaw-fiſh, whenever they meet, join in combat, and that the latter is always the aggreſſor. Sometimes two or more individuals combine to attack a ſingle whale; and it is inconceivable with what fury they make the attack. The whale, whoſe only defence is his tail, endeavours to ſtrike his enemy with it; and a ſingle blow would prove mortal. But the ſaw-fiſh, with aſtoniſhing agility, ſhuns the dreadful ſtroke, bounds into the air, and returns upon his huge adverſary, plunging the rugged weapon, with which he is furniſhed, into his back. The whale is ſtill more irritated by this wound, which only becomes fatal when it penetrates the fat. The engagement ceaſes not but with the death of one of the combatants. Martens relates an account of one of theſe combats between the Iceland whale (Balæna Glacialis) and the ſaw-fiſh. It ſeemed to be extremely dangerous to approach the field of battle. It was therefore at ſome diſtance, that he ſaw them purſuing and ſtriking each other, dealing ſuch violent blows, that the water roſe in foam as if agitated by a ſtorm. He was prevented from ſeeing the iſſue of the ſtruggle by the weather becoming thick and hazy; but he was informed by the ſailors, that ſuch combats were frequent; that they generally kept at a diſtance till the whale was vanquiſhed; and that the ſaw-fiſh, only eating the tongue, relinquiſhed the reſt of the body, which they take poſſeſſion of.

Anatomy and Phyſiology.

Forſkal informs us, that the Arabians believe that ſome ſpecies of the ſcarus, a fiſh found in the Red ſea, enter the blow-holes of the whale, and deſtroy it with their ſharp ſpines; and, in confirmation of this fact, it is mentioned, that one of theſe fiſhes was found in the blow-hole of a dead whale.

188 Birds.

The whale is even haraſſed with aquatic birds, which alight in great numbers on his back, in ſearch of the teſtaceous animals and ſmall inſects, which have made it their habitation. And, like moſt other animals, the whale is tormented with a ſpecies of louſe, peculiar to itſelf, which adheres ſo ſtrongly to the ſkin, that it may be ſooner torn aſunder than be made to let go its hold. The fins, the lips, the parts of generation, and other parts of the body, which are moſt protected from friction, are chiefly infeſted with this inſect. The bite is extremely painful, and they are moſt troubleſome in that ſeaſon when the whale is in heat.

189 Not ſo old as formerly.

Age of the whale.—If the time neceſſary for the growth or increaſe of the body were in proportion to the period of life, there could be little doubt of the whale being, of all animals known, the moſt remarkable for longevity. It is well known, that the whales which were taken when this fiſhery firſt became an object of trade, that is, between 200 and 300 years ago, were of much greater bulk than they are found to be in the preſent day. The largeſt now taken rarely exceed 60 feet long; while, at that time, ſome reached the aſtoniſhing ſize of 100 in length. The reaſon of this difference of ſize ſeems to be, that, when the fiſhery firſt commenced, whales, which had probably reached their utmoſt growth, were frequently met with. Theſe, on account of being the largeſt, were conſtantly haraſſed, purſued, and deſtroyed; ſo that none which have obtained their full growth, are now to be found in thoſe ſeas reſorted to by the fiſhermen. From this circumſtance, that no large whales are now to be ſeen in the places which they commonly frequent, it is concluded, that the period of the life of the whale is very long; and that they cannot arrive at the huge ſize for which the firſt whales were ſo remarkable, ſince they are not permitted to live undiſturbed the requiſite length of time to attain that bulk. According to Buffon, a whale may live 1000 years, ſince a carp has been known to reach the age of 200.

But,

Anatomy and Physiology.

But, reaſoning from analogy, with regard to the ſtructure and economy of the whale, we have ſeen in many inſtances, by no means holds; and it is perhaps equally inapplicable to the growth and age of this order of animals.

190 Oil.

The fat or *oil of cetaceous fiſhes.*—The fat of this order of animals is uſually called *oil.* It is the moſt fluid of animal fats, for it does not coagulate in our atmoſphere. It is found in conſiderable quantity, principally on the outſide of the muſcles, and immediately under the ſkin; and is rarely to be met with in any of the cavities, or in the interſtices of the muſcles. This ſubſtance is encloſed in a reticular membrane, apparently compoſed of fibres paſſing in all directions, which ſeem to confine its extent, and allow it little or no motion on itſelf; for the whole, when diſtended, forms almoſt a ſolid body. In ſome of the animals of this order there is a different diſtribution of the fat. Under the head or neck of the bottle-noſe whale, it is confined in large cells which admit of motion. In ſome this reticular membrane is very fine, in others it is coarſe and ſtrong, and it varies in different parts of the ſame fiſh. In the porpoiſe, ſpermaceti, and large whalebone whale, it is very fine; in the grampus and ſmall whalebone whale, it is coarſe. In all of them it is fineſt on the body, becoming coarſer as it reaches and covers the fins and tail, which latter is compoſed of fibres without any fat.

The internal fat is the leaſt fluid in this order of animals. It is nearly of the conſiſtence of hogs-lard. The external fat is the common train oil. It is the adipoſe covering from all of the whale kind, which is brought home in ſquare pieces called *flitches;* and this, which is commonly known under the name of *blubber*, after being boiled, yields the oil by expreſſion, leaving the cellular membrane. When theſe flitches or maſſes of fat become putrid, there iſſue two kinds of oil. The one is pure; but the other ſeems to have a conſiderable mixture of other animal matters, which, from the ſtate of putridity, are readily diſſolved in the purer oil, and form a kind of butter. It feels unctuous to the touch, and ropy, coagulates with cold, ſwims on water, and the pure oil ſeparates and riſes to the top. The ſubſtance which remains after all the oil is extracted, is almoſt entirely convertible into glue, and is ſold to be applied to the ſame purpoſes.

191 Of two kinds.

192 In every part of the body.

Spermaceti.—The ſubſtance called *ſpermaceti*, is found in every part of the body, mixed with the common fat of the animal; but to this it bears a ſmall proportion. In the head this ſubſtance is alſo mixed with the common fat; but here the proportions of the two ſubſtances are reverſed: the ſpermaceti is by far in greateſt quantity. And, from this circumſtance of its being found in ſuch abundance, in what, from a ſlight view, would appear to be the cavity of the ſkull, it has been by ſome ſuppoſed to be the brain.

193 Moſt abundant in the head.

The two kinds of fat in the head, are contained in cells or in cellular membrane, ſimilar to what takes place in other animals; but, beſides theſe, there are larger cells, or ligamentous parts going acroſs, the better to ſupport the vaſt load of oil of which the bulk of the head is principally compoſed. There are two places in the head in which this oil lies. Theſe are ſituated along the upper and lower part of it, and are divided by the noſtrils and a great number of tendons which paſs from the noſe and the different parts of the head. The cells, which are of the ſmalleſt ſize, and are the leaſt ligamentous, are obſerved to contain the pureſt ſpermaceti. Theſe cells reſemble thoſe which contain the fat in other parts of the body neareſt the ſkin, and they lie above the noſtril, along the upper part of the head, immediately under the ſkin and common cellular membrane. The ſpermaceti, which lies above the roof of the mouth, or between it and the noſtril, is more intermixed with a ligamentous cellular membrane; and it is contained in chambers whoſe partitions are perpendicular. Near the noſe theſe chambers are ſmalleſt; but they become larger towards the back part of the head, and in theſe laſt the ſpermaceti is pureſt. About the noſe Mr Hunter diſcovered a great number of veſſels which had the appearance of a plexus of veins, ſome of which were as large as a finger. They were loaded with ſpermaceti and oil, and ſome of them had correſponding arteries. He thinks it probable that they were lymphatics, and that their contents were abſorbed from the cells of the head; for many of theſe cells or chambers were found empty.

Anatomy and Physiology.

The numerous uſeful purpoſes to which the common oil of the whale and the ſpermaceti are applied, the latter ſometimes in medicine, and both in many of the arts and in domeſtic economy, are too well known to be particularly pointed out.

194 Doubts and opinions of its origin.

Ambergris.—This ſubſtance, the origin of which was long a matter of doubt and uncertainty among naturaliſts, is now pretty well aſcertained to be the production of ſome of the cetaceous tribe of animals. By ſome it was ſuppoſed to be the excrement of the whale, and, by others, that it was the dung of birds. According to ſome, it is compoſed of honey and wax, conſolidated by the heat of the ſun and the action of ſea water; while, in the opinion of others, it is a bituminous ſubſtance, which flows from the bowels of the earth into the waters of the ocean, where it becomes hard and firm.

195 The production of the ſpermaceti whale.

But, in the opinion of later naturaliſts, it is a ſubſtance which has an origin and formation ſimilar to that of muſk, and is a production of the ſpermaceti whale. This opinion has been rendered more probable by the ſame ſubſtance having been found in ſome whales of this ſpecies, and particularly in one which came on ſhore on the coaſt of Bayonne in France, in 1741. In the latter it was found in rounded maſſes from three to 12 inches in diameter, which weighed from 1½lb. to 20lb. It was contained in an oval bag from three to four feet long, and from two to three feet broad, which was ſuſpended immediately above the teſticles. This bag terminated in two tubes, one of which becoming narrower, reached to the penis; the other proceeded from the kidneys, and terminated in the other extremity. The bag was almoſt entirely filled with a yellow-coloured fluid, not quite ſo thick as oil, exhaling a ſimilar but ſtronger odour than the maſſes of ambergris which floated in it. Each maſs was compoſed of concentric layers. The number of maſſes found in one bag never exceeded four. One was found which weighed 20lb.; but there was no other in the ſame bag. It has been ſuppoſed that the ambergris is only found in old whales, and in the males. Some naturaliſts think that this ſubſtance is an oily concre-

tion

Anatomy and Physiology.

tion which exhales the odour of the fluid in which it is formed; and that the bag which contains these fragrant masses is the urinary bladder.

But if this be the usual mode in which ambergris is produced, it appears difficult to account for the large masses which are found floating in the waters of the ocean in different parts of the world, as among the islands in the torrid zone, and in the Indian and African seas.

According to the information collected by Dr Swediaur, and which the reader will find more fully detailed under the word AMBERGRIS, it appears that it is generally considered by the New England fishermen as a production of the spermaceti whale. Sometimes they find it floating in the sea; and when this happens, they search for the whale, supposing that it has been voided by this animal. Sometimes they cut it out from a swelling or protuberance on the belly of the dead whale. And from all the information which Dr Swediaur could obtain, he concludes, that ambergris is generated in the bowels of the spermaceti whale (*Physeter Macrocephalus*, Lin.), and that it is there mixed with the beaks of the *sepia octopodia*, which is the principal food of this whale. He therefore considers this substance to be the fæces of the animal preternaturally indurated, mixed with the indigestible relicks of the food. See AMBERGRIS.

196 Supposed to be indurated fæces.

Later information has verified some part of the doctor's opinion, as well as some of the conjectures of earlier naturalists. Mr Coffin, master of a ship employed in the southern whale-fishery, brought home in the year 1791, 362 ounces of ambergris taken from the body of a female spermaceti whale on the coast of Guinea. Part was found floating in the sea, and part was seen coming from the anus while the people were employed in cutting up the blubber. More was found in the intestines, and the rest in a bag communicating with them. This whale was lean, sickly and old, and yielded but a small proportion of oil. When the spermaceti whale is struck, she generally voids her excrement; and, if she does not, it is conjectured that she has no ambergris. Mr Coffin supposes, that the production of this substance is either the cause or the effect of some disease, as he thinks it is most likely to be found in sickly fish, as was the case with the fish which yielded him so large a quantity. Perhaps it may be found by future and more accurate investigation to be a natural production of the animal, secreted to answer some important purpose in its economy; and that it is preternaturally increased in quantity, either by the excessive or the diminished action of the vital powers in age or disease, and then it is excreted, or discovered in the body of the fish after death.

197 Probably a preternatural substance.

198 Used as a perfume.

Ambergris is one of the most fragrant perfumes; and for this purpose it is chiefly employed in this as well as in most other countries. In Asia, and in some parts of Africa, it is also used in medicine and cookery. It is bought up in considerable quantities by the pilgrims who travel to Mecca, by whom it is supposed to be used in fumigations in religious ceremonies, in the same manner as the burning frankincense or other fragrant perfumes makes part of the religious rites of other countries.

CHAP. III. *Of the Whale-Fishery.*

Whale-Fishery.

NOTHING, perhaps, displays in a more striking manner the power and dexterity of man than the facility and success with which he conquers and destroys the most enormous and the most formidable of the animated productions of nature. The elephant and the whale, the largest animals known, the one seemingly secure in the midst of the huge icy mountains of the polar regions, and the other roaming at pleasure in the almost inaccessible wilds and deep woods of the torrid zone, yield to his power or fall beneath his all-subduing arm. The swiftest and the most ferocious, as well as the most sagacious, and the most cunning and artful, escape not the toils and snares which he contrives, or the deadly aim of the instruments of his invention.

199 Power of man in subduing the largest animals.

Whether man was originally urged by necessity, as is most probable, to attack so huge a monster as the whale, or whether it was indirectly to gratify the artificial demands of luxury that he first attempted and still continues to persevere in an occupation so full of danger and fatigue, it must be allowed to be one of the boldest and most daring enterprises that can be conceived. And indeed were it not quite familiar to us, we should still behold with dread and astonishment so feeble a creature as man preparing to attack this monster of the deep, whose strength, were it properly directed, no power could resist; nor would our wonder be diminished, when we find that he seldom fails to succeed in the attempt. But knowledge is power; and the triumphs of intellectual power are equally conspicuous, in accommodating the most unwieldy and most unmanageable parts either of the inanimate or animated creation to the supply and gratification of human wants and desires, in guiding through the trackless ocean, the ship from which the spear is launched for the destruction of the whale, or in digging from the bowels of the earth the metal with which the compass and the harpoon are constructed.

200 Norwegians first acquainted with this fishery.

So early as the 9th century, in the time of Alfred the great, it appears that the Norwegians were acquainted with the whale-fishing. This prince received an account of the discoveries of a Norwegian about the North Cape, in which he speaks of his having been as far north as the places to which the whale-hunters resort; which is considered as a proof of its antiquity; although it is supposed that it was pursued merely on account of the oil, the use of the whalebone not being then known *.

* *Anderson's Hist. of Comm.* i. 84.

But the people who are recorded in history as having prosecuted this fishery with success, were the Biscayans. The spermaceti whale, as well as the whalebone whale were, at that time frequently seen in these latitudes. The first attempts were made in the bay of Biscay, and in the gulf of Gascony. Ships were fitted out, instruments were constructed, and an establishment was formed for carrying on the fishery. It was observed that the whale only appeared at certain seasons of the year, which led the new fishers to suppose that his residence in other seas was more permanent. And discovering that they retreated towards the polar regions, ships were fitted out and manned

201 Biscayans most expert.

Whale-Fiſhery.

with the moſt experienced ſeamen, to purſue them northward. At this time the Biſcayans carried on this trade, both for the ſake of the oil and the whalebone.

202 The Engliſh firſt engage in it.

Towards the end of the 16th century, the Engliſh firſt engaged in the whale-fiſhery. But at this time they were ſo little acquainted with it, that "the requeſt of an honeſt merchant, by letter to a friend of his, to be adviſed and directed in the courſe of killing the whale," is recorded by the hiſtorians of that age. The anſwer was, that a ſhip of two hundred tons muſt be fitted out, and provided with all kinds of proper utenſils and inſtruments. But it appears to have been neceſſary to ſend to *Biſkaie for men ſkilful in catching the whale and ordering of the oil, and one cooper ſkilful to ſet up the ſtaved caſk.*

Hakluyt's Voyage, i. 414.

In the year 1594, ſome Engliſh ſhips made a voyage to Cape Breton, at the entrance of the bay of St Lawrence, ſome for the morſe-fiſhing, and others for the whale-fiſhing. This ſeems to have been among their firſt attempts in this trade. The fiſhing proved unſucceſsful; but they found in an iſland 800 whale fins or whalebone, part of the cargo of a Biſcayan ſhip wrecked there three years before, which they put on board and brought home. This was the firſt time that this ſubſtance was imported into England.

203 Whalebone firſt introduced.

204 Ships fitted out from Hull.

The town of Hull, in 1598, firſt fitted out ſhips from England for the Greenland whale-fiſhery, a branch of trade which has ſince become very conſiderable, and has frequently received the protection and encouragement of the legiſlature. A premium of ſix ſhillings for each ton of oil, and five ſhillings for each ton of whalebone, was at firſt granted by government in 1672. But this encouragement appearing inſufficient for the ſucceſs of the fiſhery, or the enterpriſe being conſidered too great for the ſtock of individuals, a company was incorporated in 1692, and eſtabliſhed by royal authority, with peculiar privileges. Their capital amounted to 40,000l. ſterling. The ſubſcriptions in a few years increaſed to 82,000l. ſterling; but in 1701 the company was diſſolved, and the trade made free to all adventurers.

205 Premium granted.

206 Company eſtabliſhed.

207 Engliſh very ſucceſsful.

The Engliſh were now become the moſt ſucceſsful adventurers in this fiſhery. By their ſkill, their induſtry, and perſeverance, and the aid and encouragement granted by the legiſlature, they carried on the whale-fiſhery on more advantageous terms than the Biſcayans the firſt adventurers, whoſe efforts became leſs enterpriſing, as their ſucceſs was more precarious. In the year 1730, they fitted out for this fiſhery only 33 ſhips; about the year 1735, the number was diminiſhed to ten or twelve, and continuing to decreaſe till the war in 1744, the trade was finally abandoned.

208 New Engliſh Company.

The Engliſh ſtill perſevered in the trade, a new company was eſtabliſhed and a fund of 50,000l. ſterling was provided, with power to the company to make all neceſſary and proper regulations. And for the farther encouragement of the fiſhery, a duty of 17l. or 18l. ſterling was impoſed on the ton of all oil imported, and a premium or bounty, to the ſame amount, was paid for every ton of oil exported which was the produce of the national fiſhery. Other encouragements were alſo given; rewards were beſtowed on the moſt ſucceſsful; the ſailors employed in the trade were exempted from the impreſs ſervice; adventurers were indemnified for all loſſes which they ſuſtained in their firſt enterpriſe; and they were granted the privilege of providing, duty free, all thoſe articles which were needed in this fiſhery, and were the ſubjects of taxation.

209 Fiſhery encouraged.

Whale-Fiſhery.

Still farther to encourage and extend the fiſhery, which now had become an important national concern, parliament granted in 1779 a premium to five ſhips which ſhould bring home the greateſt quantity of oil; for the firſt greateſt quantity, 500l. ſterling; for the next, 400l.; and for the third, fourth, and fifth, 300l. 200l. and 100l. ſterling.

210 Fiſhery in North America.

In North America, while that continent was ſubject to Britain, the whale-fiſhery was carried on to a very conſiderable extent. A ſociety was eſtabliſhed at New York, and numbers of ſhips were equipped for this trade in different parts of the colonies, by enterpriſing adventurers, and it has been long extremely ſucceſsful and lucrative.

211 Advantages of the fiſhery.

The advantages derived to the nation from the whale-fiſhery, are no doubt very conſiderable. Beſide being an excellent nurſery for hardy ſeamen, it is the foundation of great commercial concerns, by introducing articles which become the ſources of an important trade. In this view it has often been an object of legiſlative diſcuſſion, and has often experienced the liberal encouragement and protection of government. According to a law paſſed in favour of ſhips employed in this trade, every Britiſh veſſel of 200 tons or upwards, bound to the Greenland ſeas, on the whale-fiſhery, if found to be duly qualified agreeable to the act, obtained a licenſe from the commiſſioners of the cuſtoms to proceed on ſuch voyage; and on the ſhips return, the maſter and mate declaring on oath that they were on ſuch voyage, that they uſed all their endeavours to take whales, and that all the whale-fins, blubber, oil, &c. imported in their ſhip, were taken by their crew in thoſe ſeas, there was allowed 40s. for every ton according to the admeaſurement of the ſhip.

212 Regulations.

It was afterwards found, however, that ſo great a bounty was neither neceſſary to the ſucceſs of the trade, nor expedient with regard to the public. In 1786, therefore, the acts conferring the ſaid emoluments being upon the point of expiring, the ſubject was brought under the conſideration of parliament; and it was propoſed to continue the former meaſures, but with a reduction of the bounty from 40s. to 30s. In propoſing this alteration, it was ſtated, "that the ſums which this country had paid in bounties for the Greenland fiſhery amounted to 1,265,461l.; that, in the laſt year, we had paid 94,858l.; and that, from the conſequent deduction of the price of the fiſh, the public at preſent paid 60 per cent. upon every cargo. In the Greenland fiſhery there were employed 6000 ſeamen, and theſe ſeamen coſt government 13l. 10s. per man per annum, though we were never able to obtain more than 500 of that number to ſerve on board our ſhips of war. Beſides, the vaſt encouragement given to the trade had occaſioned ſuch a glut in the market, that it was found neceſſary to export conſiderable quantities; and thus we paid a large ſhare of the purchaſe money for foreign nations, as well as for our own people, beſides ſupplying them with the materials of ſeveral important manufactures." This propoſition was oppoſed by ſeveral members, but was finally carried; and the propriety of the meaſure became very

213 State of the trade in England.

ſoon

Whale-Fiſhery.

ſoon apparent. At that time (1786) the number of ſhips employed from England in the whale-fiſhery to Davis ſtraits and the Greenland ſeas amounted to 139, beſides 15 from Scotland. The propoſed alteration took place the following year (1787); and notwithſtanding the diminution of the bounty, the trade increaſed; the number of ſhips employed the ſame year from England amounting to 217, and the next year (1788) to 222. Their cargoes conſiſted of 5989 tons of clean oil; 7654 tons of whalebone, beſide 13,386 ſeal ſkins.

214 Southern whale-fiſhery

For ſome years Britiſh capital has been employed in a ſouthern whale-fiſhery; and this has alſo been a very lucrative branch of trade. This fiſhery was firſt proſecuted with vigour about the commencement of the American war. In the year 1785, 18 ſhips which produced 29,000l. ſterling were employed in it. Two years afterwards the number of ſhips was doubled, and the returns increaſed in a much greater proportion, which is a proof of the flouriſhing ſtate of the trade. The number of ſhips in 1787 was 38, and the produce amounted to 107,000l. ſterling.

215 carried on by Americans ſettled in Milford Haven.

Some American families, when the war broke out in that country, emigrated to Nova Scotia, where they propoſed to carry on the whale-fiſhery; but being diſcouraged from particular circumſtances, on the invitation of the honourable Mr Greville, they ſettled at Milford in Milford Haven, and fitted out a ſhip, which had a very ſucceſsful voyage. The number of ſhips ſoon increaſed to four, and at preſent (1803), that number is doubled, ſo that 18 ſhips are now employed in the ſouthern whale-fiſhery from this port, with a capital afloat of not leſs than 80,000l. ſterling. This fact is ſtated by Mr Barrow in his travels in ſouthern Africa; and "I mention it, (ſays he), as a ſtriking inſtance to ſhow the importance of the ſouth-ſea fiſhery, and as a proof that, contrary to the generally received opinion, it may be carried on by ſkill and management, and without the adventitious aid of trading, ſo as fully to anſwer the purpoſe of thoſe who are properly qualified to embark in the undertaking. For where men, by induſtry in their profeſſion, riſe from ſmall beginnings into affluence, ſuch profeſſion may be followed with a greater certainty of ſucceſs than many others which appear to hold out more ſeducing proſpects. The American fiſhermen never ſet out with a capital, but invariably work themſelves into one; and the ſouth-ſea fiſhery from England may ſucceed on the ſame principle, as the above example clearly ſhews, under every diſadvantage, when properly conducted.

216 Partially encouraged.

"It is difficult to point out the grounds of juſtice or policy in giving tonage bounties to the Greenland fiſhery, and only premiums to ſucceſsful adventurers in the ſouthern fiſhery. A voyage to Greenland is four months, the outfit of which is covered by the tonage bounty, and, if wholly unſucceſsful, the ſame ſhip can make a ſecond voyage the ſame year to ſome of the ports of the Baltic. A voyage to the South ſea is from 12 to 18 months, and muſt depend ſolely on the ſucceſs in fiſhing. A Greenland ſhip ſets out on a ſmall capital, and builds on a quick return; but a ſouth-ſea whaler muſt expend a very conſiderable capital in making his outfit, for which he can reckon on no returns for at leaſt 18 months. Hence the uſual practice of ſending them out in the double capacity of fiſhers and contraband traders, in order that the loſſes they may ſuſtain by ill ſucceſs in fiſhing may be made good by ſmuggling.

Whale-Fiſhery.

"If by extending the fiſhery we ſhould be enabled to ſupply the continent of Europe, two objects ſhould never be out of the view of the legiſlature—the exemption from duty of all the produce of the fiſheries, and particularly ſpermaceti, which, if manufactured into candles, and ſubject only to the ſame duty as tallow candles, would produce much more to the revenue than when taxed as it now is, as wax. I have heard it aſſerted that the extenſion of the premium ſyſtem, by doubling its preſent amount, which never could exceed 30,000l. a-year, would be adequate encouragement to ſupply the home market with ſpermaceti and black whale oil, and that the bonding of foreign oil in Great Britain would throw the whole agency of American fiſhery on England with greater advantage to both countries than by any other ſyſtem.

117 Cape of Good Hope a convenient ſtation.

"But when we conſider that the home market is neceſſarily ſecured to Britiſh ſubjects by high duties on foreign oil, we ſhould alſo conſider that every means to leſſen the charges of outfit ſhould ſtrengthen our adventure in this lucrative branch of trade. Among others that would ſeem to have this tendency, are the facilities that might be afforded by the happy poſition of the Cape of Good Hope. If at this ſtation was eſtabliſhed a kind of central depot for the ſouthern whale-fiſhery, it might, in time, be the means of throwing into our hands excluſively the ſupply of Europe with ſpermaceti oil. To the protection of the fiſheries on the eaſt and weſt coaſts of ſouthern Africa, the Cape is fully competent, and the fiſheries on theſe coaſts would be equally undiſturbed in war as in peace. From hence they would, at all times, have an opportunity of acquiring a ſupply of refreſhments for their crews, and of laying in a ſtock of ſalt proviſions at one-fourth part of the expence of carrying them out from England".

218 Dutch early engaged in the fiſhery.

The Dutch were very early engaged in the Greenland whale-fiſhery, which ſoon became one of the moſt important objects of their trade. In 1611 a company was eſtabliſhed in Amſterdam for carrying on the whale-fiſhery on the coaſts of Spitzbergen and Nova Zembla. This branch of trade has in general ſucceeded better with the Dutch than with any other nation. The principal reaſon which has been aſſigned for this ſucceſs is the greater economy and frugality of this people, in this as in all their concerns, by which they are able to underſell others in oil and whalebone. The mode of fitting out all their ſhips is alſo mentioned as a cauſe of their proſperity in this fiſhery. The ſhip-builder, the rope-maker, the baker, the brewer, and other tradeſmen employed in fitting out theſe ſhips, commonly take a ſhare in the voyage. When it proves fortunate, they are double gainers; but when it is unſucceſsful, the loſs which they ſuſtain is probably not greater than if they had merely furniſhed the articles without having a chance of the profit; and in this reſpect have the advantage of mere merchants. It is obſerved by De Witt that this fiſhery ſince it fell into the hands of individuals has ſeldom failed to be profitable; but while it was monopolized by the Dutch Greenland company, the profit was inconſiderable. Some idea may be formed of the extent to which the Dutch have carried this trade by ſtating

219 Extent of their fiſhery.

that

that for a period of 46 years preceding the year 1722, 5886 ſhips were employed in it, and in this period they took 32,907 whales. Each whale at an average, valued at 500l. makes the total amount above 16 millions ſterling.

The following table affords at one view a brief record of the Dutch whale-fiſhery from 1661 to 1788. The number of ſhips employed for each year and the number of whales taken are ſtated in ſeparate columns.

220 Ships employed, and produce of it, from 1661 to

A LIST *of the number of Ships from* Holland, *which were employed in the* Greenland *and* Davis Sraits *Whale-fishery ſince* 1661. N. B. *The* Dutch *ſent Ships to* Davis Straits *for the firſt time in* 1719.

Years.	*Ships.*	*Fiſh.*	*Years.*	*Ships.*	*Fiſh.*
1661	133	$452\frac{1}{2}$	1708	122	$533\frac{1}{2}$
1662	149	862	1709	126	$192\frac{3}{4}$
1663	202	$932\frac{1}{2}$	1710	137	62
1664	193	782	1711	117	631
1665	War with England, no Ships out.		1712	108	$373\frac{3}{4}$
1666			1713	93	$237\frac{1}{2}$
1667			1714	108	1291
1668	155	573	1715	134	$698\frac{1}{2}$
1669	138	$1013\frac{1}{2}$	1716	153	535
1670	148	792	1717	179	$392\frac{1}{2}$
1671	158	$1088\frac{1}{2}$	1718	139	$280\frac{1}{4}$
1672	War with England, no Ships out.		1719	211	346
1673			1720	228	$455\frac{17}{24}$
1674			1721	260	$733\frac{2}{3}$
1675	147	$900\frac{1}{2}$	1722	254	$1101\frac{1}{2}$
1676	145	$812\frac{1}{6}$	1723	233	314
1677	145	$785\frac{1}{3}$	1724	232	358
1678	120	$1118\frac{1}{4}$	1725	226	$530\frac{1}{2}$
1679	126	792	1726	218	244
1680	151	1373	1727	202	$402\frac{1}{2}$
1681	175	876	1728	182	$363\frac{1}{2}$
1682	195	1444	1729	184	$229\frac{1}{3}$
1683	242	$1338\frac{1}{2}$	1730	168	$248\frac{3}{4}$
1684	233	$1153\frac{1}{2}$	1731	164	$298\frac{1}{4}$
1685	209	$1283\frac{7}{12}$	1732	176	$314\frac{1}{6}$
1686	189	$664\frac{1}{2}$	1733	184	$360\frac{1}{4}$
1687	194	$621\frac{1}{2}$	1734	186	327
1688	214	$340\frac{1}{2}$	1735	185	$496\frac{3}{4}$
1689	160	$241\frac{1}{8}$	1736	191	$857\frac{1}{2}$
1690	117	785	1737	196	$504\frac{1}{2}$
1691	2	war with France.	1738	195	472
			1739	192	$728\frac{1}{4}$
1692	32	$56\frac{1}{2}$	1740	187	$665\frac{1}{2}$
1693	90	175	1741	178	$312\frac{1}{4}$
1694	63	$161\frac{5}{12}$	1742	173	$358\frac{1}{2}$
1695	97	$187\frac{5}{6}$	1743	185	937
1696	122	428	1744	187	1494
1697	131	1279	1745	184	$568\frac{3}{4}$
1698	139	$1483\frac{1}{2}$	1746	180	1036
1699	151	$775\frac{1}{2}$	1747	164	$776\frac{1}{4}$
1700	173	$913\frac{5}{6}$	1748	94	$278\frac{1}{6}$
1701	208	$2071\frac{1}{2}$	1749	157	$619\frac{1}{4}$
1702	224	$687\frac{7}{12}$	1750	158	$590\frac{1}{2}$
1703	207	644	1751	162	$330\frac{5}{12}$
1704	130	$652\frac{1}{6}$	1752	159	$546\frac{1}{4}$
1705	157	1678	1753	166	$639\frac{5}{8}$
1706	151	$966\frac{1}{2}$	1754	171	$672\frac{11}{12}$
1707	131	126	1755	181	$720\frac{1}{2}$

Years.	*Ships.*	*Fiſh.*	*Years.*	*Ships.*	*Fiſh.*
1756	186	$568\frac{1}{2}$	1773	134	$444\frac{1}{2}$
1757	180	$423\frac{1}{2}$	1774	130	450
1758	159	$371\frac{1}{2}$	1775	129	105
1759	155	464	1776	123	509
1760	154	454	1777	116	$427\frac{1}{4}$
1761	161	$357\frac{1}{2}$	1778	111	$306\frac{1}{2}$
1762	165	$189\frac{3}{4}$	1779	105	$168\frac{1}{4}$
1763			1780	82	476
1764	161	224	1781	War with England, no ſhips out	
1765	165	477	1782		
1766	167	$189\frac{1}{3}$	1783	55	330
1767	165	$179\frac{1}{6}$	1784	62	198
1768	160	$600\frac{1}{3}$	1785	65	300
1769	152	1127	1786	67	476
1770	150	523	1787	67	$239\frac{1}{2}$
1771	150	$143\frac{1}{3}$	1788	69	190
1772	131	$768\frac{1}{2}$			

221 1788.

This table is intereſting, as it ſhews us the precarious nature of this fiſhery. But it would have been ſtill more valuable, if ſome other circumſtances had been ſtated, ſuch as the nature of the ſeaſons when the fiſhery was leſs ſucceſsful; whether the preceding winter was unuſually long or ſevere; whether the ſhort ſummer of theſe regions was not remarkable for extremes or ſudden changes of heat and cold, ſudden changes and variations of the wind, the prevalence of particular winds; or other facts which might enable us to trace the cauſes of the extraordinary failure and ſucceſs of the fiſhery.

222 Attempt of the French to revive it.

The French made an attempt to revive this branch of trade in 1784. Six ſhips fitted out at Dunkirk at the expence of the late king, made ſome ſucceſsful voyages both in the northern and ſouthern whale-fiſhery. The advantages of the trade were obvious, and the French government were eager to improve them. In the year 1786, ſome of the inhabitants of the iſland of Nantucket, near Halifax in North America, were invited to ſettle at Dunkirk to carry on the fiſhery. Several families accepted the invitation, and to encourage them to proſecute the trade, they were permitted to enjoy peculiar privileges and immunities. Ships were ſent out to different ſeas, and had proſperous voyages. But this trade, as well as every other branch of French commerce, has probably been completely interrupted by the late revolution, and the particular circumſtances in which that nation has been with regard to foreign powers.

223 Other nations engage in it.

Beſides the nations which we have mentioned, who have been moſt deeply concerned in this fiſhery, the inhabitants of other countries have alſo embarked in it. Some ſhips were equipped at Embden in 1768 by order of the king of Pruſſia; the Swediſh government in 1774 granted to a company eſtabliſhed at Gottenburgh the excluſive privilege of the Davis ſtraits and Greenland fiſhery for 20 years; and Denmark in 1775 attempted to take a ſhare in the benefits of that fiſhery, which many of the nations of Europe, more enterpriſing or more induſtrious, had long ſucceſsfully enjoyed on the ſhores of the Daniſh dominions.

224 Time of the fiſhery.

The whale-fiſhery commences in May. It is about this time that the whales are ſeen in great numbers

between

Whale-Fiſhery.

between the 76th and 79th degree of north latitude; and at a diſtance they exhibit the appearance of the ſmoke riſing from the chimnies of a great town by the water which is thrown into the air by their ſpouting or blowing. The fiſhery continues for the months of June and July, when it muſt be abandoned whether it has been ſucceſsful or unproſperous; becauſe it is neceſſary to be clear of the ice by the end of Auguſt. The ſhips return home at fartheſt in the month of September. But if the fiſhery happen to begin early in May, and prove abundant, they ſometimes return in June or July.

225 Mode of taking the whale by Europeans.

We ſhall now conclude this article with a ſhort account of the different modes that are practiſed in taking the whale. The following is employed in the Greenland fiſhery by Europeans. Every ſhip is provided with ſix boats, to each of which belong ſix men for rowing the boat, and a harponeer, whoſe buſineſs it is to ſtrike the whale with his harpoon. Two of theſe boats are kept conſtantly on the watch at ſome diſtance from the ſhip, faſtened to pieces of ice, and are relieved by others every four hours. As ſoon as a whale is perceived, both the boats ſet out in purſuit of it, and if either of them can come up before the whale finally deſcends, which is known by his throwing up his tail, the harponeer diſcharges his harpoon at him. There is no difficulty in chooſing the place where the whale is to be ſtruck, as ſome have aſſerted; for theſe animals only come up to the ſurface in order to breathe, or *blow*, as the fiſhermen term it, and therefore always keep the ſoft and vulnerable part of their bodies above water. A late improvement was made in the method of diſcharging the harpoon; namely, by ſhooting it out of a kind of ſwivel or muſquetoon: but it does not appear, that ſince this improvement was made, the whale-fiſhing ſhips have had better ſucceſs than before.—As ſoon as the whale is ſtruck, the men ſet up one of their oars in the middle of the boat as a ſignal to thoſe in the ſhip. On perceiving this, the watchman alarms all the reſt with the cry of *fall! fall!* upon which all the other boats are immediately ſent out to the aſſiſtance of the firſt.

The whale finding himſelf wounded, ſwims off with prodigious velocity. Sometimes he deſcends perpendicularly; and ſometimes goes off horizontally, at a ſmall depth below the ſurface. The rope which is faſtened to the harpoon is about 200 fathoms long, and properly coiled up, that it may freely be given out as there is a demand for it. At firſt, the velocity with which this line runs over the ſide of the boat is ſo great, that it is wetted to prevent its taking fire: but in a ſhort time the ſtrength of the whale begins to fail, and the fiſhermen, inſtead of letting out more rope, ſtrive as much as poſſible to pull back what is given out already, though they always find themſelves neceſſitated to yield at laſt to the efforts of the animal, to prevent his ſinking their boat. If he runs out the 200 fathoms of line contained in one boat, that belonging to another is immediately faſtened to the end of the firſt, and ſo on; and there have been inſtances, where all the rope belonging to the ſix boats has been neceſſary, though half that quantity is ſeldom required. The whale cannot ſtay long below water, but again comes up to blow; and being now much fatigued and wounded, ſtays longer above water than uſual. This gives another boat time to come up with him, and he is again ſtruck with a harpoon. He again deſcends, but with leſs force than before; and when he comes up again, is generally incapable of deſcending, but ſuffers himſelf to be wounded and killed with long lances which the men are provided with for that purpoſe. He is known to be near death when he ſpouts up the water deeply tinged with blood.

Whale-Fiſhery.

The whale being dead, is laſhed alongſide the ſhip. They then lay it on one ſide, and put two ropes, one at the head, and the other in the place of the tail, which, together with the fins, is ſtruck off as ſoon as he is taken, to keep theſe extremities above water. On the off-ſide of the whale are two boats, to receive the pieces of fat, utenſils, and men, that might otherwiſe fall into the water on that ſide. Theſe precautions being taken, three or four men with irons at their feet to prevent ſlipping, get on the whale, and begin to cut out pieces of about three feet thick and eight long, which are hauled up at the capſtan or windlaſs. When the fat is all got off, they cut off the whalebone of the upper jaw with an axe. Before they cut, they are all laſhed to keep them firm; which alſo facilitates the cutting, and prevents them from falling into the ſea; when on board, five or ſix of them are bundled together, and properly ſtowed; and after all is got off, the carcaſs is turned a-drift, and devoured by the white bears, who are very fond of it. In proportion as the large pieces of fat are cut off, the reſt of the crew are employed in ſlicing them ſmaller, and picking out all the lean. When this is prepared, they ſtow it under the deck, where it lies till the fat of all the whales taken during the fiſhery is on board; then cutting it ſtill ſmaller, they put it up in tubs in the hold, cramming them full and cloſe. At the end of the ſeaſon they return home, where the fat is boiled and preſſed to give out the oil.

226 By the people of Kamtſchatka.

But a different method is practiſed by the rude inhabitants of the different nations on the coaſts of the frozen ocean. On ſome parts of the ſea coaſts of Kamtſchatka, the return of the fiſhing ſeaſon is celebrated with a grand feſtival and great rejoicings in their ſubterraneous winter habitations, in which many ſuperſtitious ceremonies are performed. In one part of the ceremonies dogs are ſacrificed, with beating of drums and other rude muſical inſtruments. The prieſts who attend and conduct the feſtival, tranſport with great ſolemnity and pomp a figure of a whale, made of wood, from the ſummer habitation to the winter cottage.

227 Their previous ceremonies.

As the ceremonies proceed, the whole company aſſembled ſhout with a great noiſe, that the whale has made its eſcape from the cottage to the ſea; and they pretend even to ſhow the traces of the whale in its courſe, as if it had really made its way through the opening in the cottage. Theſe ceremonies being ended, the men prepare their nets, and embark in their canoes. The nets are ſet at the openings of bays, where fiſh, which are the food of the whale, are abundant, and in the purſuit of which entering the bays he is taken. When this is obſerved by the people in the canoes, they approach and ſecure their prize with ropes and ſtraps of leather. This event is again celebrated by their wives and children on ſhore with dancing, ſinging, and other demonſtrations of joy. But after the whale is ſufficiently ſecured, he is not brought on

ſhore

Whale-Fiſhery.

ſhore till another ceremony is performed. They put on their beſt clothes, and, with ſimilar ſolemnity, tranſport the image of the whale in wood from the winter to a new ſummer habitation. A lamp is there lighted up, and an attendant is appointed to watch and keep it burning from the ſpring to the autumn. The whale is then cut up, and furniſhes for a long time what is conſidered by the natives of thoſe regions a very delicate food.

228 By the people of the Kurile iſlands.

Among the Kurile iſlands, which are ſituated near the ſouthern extremity of the peninſula of Kamtſchatka, the whales are moſt abundant about the beginning of autumn. At that time the inhabitants embark in their canoes, and ſearch for them in places where they generally find them aſleep on the ſurface of the water. When they are ſo fortunate as to find one in this ſituation, they approach with the leaſt poſſible noiſe; and, when they have come within the proper diſtance, they pierce him with poiſoned arrows. And although theſe wounds ſeem extremely ſlight, they are ſaid in a ſhort time to occaſion great pain. The whale thus wounded, moves about furiouſly, blows with great violence, and ſoon dies.

229 Of Iceland.

We have already mentioned the mode of taking the whale which is practiſed by the Icelanders, in giving the natural hiſtory of the *balæna glacialis*, or Iceland whale. It is according to Anderſon, by throwing blood into the ſea, when they get between the whale and the ſhore. They then endeavour to drive him towards the ſhore; but the whale finding himſelf purſued, attempts to regain the ocean, and approaching the blood, is alarmed; and rather than ſwim acroſs it, returns towards the land, where he is often thrown on ſhore. But this is contradicted by Horrebow, who ſays, that the uſual method of killing the whale in Iceland, is with the harpoon.

230 Of Greenland.

When the whale returns to the coaſts of Greenland, the fiſhermen put on their large ſkin coats, and furniſh themſelves with a large knife, and a ſtone to ſharpen it. They provide alſo harpoons, ſpears, and arrows, with a number of large ſkins of the ſea dog inflated. Thus equipped, they launch their canoes, and embark with their wives and children. The harpoon which they generally employ, is pointed with bone, or a ſharp ſtone. Some indeed have harpoons of iron, which they procure from the Danes by barter for the oil or fat of the whale. The ſcarcity of wood and iron makes theſe articles extremely valuable to Greenlanders, and has excited their ingenuity to avoid the riſk of loſing them. For this purpoſe an inflated bladder of the ſkin of the ſea-dog is attached to the harpoon, ſo that in caſe it ſhould not reach the whale when they attempt to ſtrike, it may float on the water, and be recovered. Thus equipped, they launch out into the ocean in their ſmall canoes, and, with great intrepidity attack the largeſt whales. They approach them, ſays Anderſon, with aſtoniſhing boldneſs, and endeavour to fix, by means of their harpoon, which they throw at his body, ſome of the ſkins inflated with air. For, notwithſtanding the enormous bulk of this animal, two or three of theſe ſkins, by the reſiſtance which they make to the water, on account of their diminiſhed ſpecific gravity, greatly impede his attempts at plunging into the deep. Having by this means ſucceeded in arreſting his progreſs, they approach nearer; and, with their lances, pierce his body, till he become languid and feeble with the loſs of blood, and at laſt dies. The fiſhermen then plunge into the ſea with their ſkin-jackets filled with air, and ſwim to their prize; and, floating on the ſurface of the water, they cut off with their knives from every part of the whale the fat or blubber, which is thrown into the canoes. And, notwithſtanding the rudeneſs and imperfection of their inſtruments, their dexterity is ſuch, that they can extract from the mouth the greateſt, or at leaſt the beſt part of the whalebone.

Whale-Fiſhery.

231 Aſtoniſhing mode by the Floridan Indians.

But the mode of fiſhing the whale, the boldeſt and moſt aſtoniſhing, is that which is practiſed by the Indians on the coaſt of Florida. When a whale appears, they faſten to their bodies two pieces of wood and a mallet; and theſe inſtruments, with their canoe, conſtitute the whole of their fiſhing equipage. When they approach the whale, they throw themſelves into the water, ſwim directly towards him, and have the addreſs to get upon his neck, taking care to avoid the ſtroke of his fins or tail. When the whale firſt ſpouts, the Indian introduces one of the pieces of wood into the opening of one of the blow-holes, and drives it home with the mallet. The whale thus attacked, inſtantly plunges, and carries the Indian along with him, who keeps faſt hold of the animal. The whale, which has now only one blow-hole, ſoon returns to the ſurface of the water, to reſpire; and, if the Indian ſucceeds in fixing the other piece of wood into the ſecond blow-hole, the whale again deſcends to the bottom, but a moment after re-appears on the ſurface, where he remains motionleſs, and immediately expires by the interruption of the function of reſpiration.

EXPLANATION OF PLATES.

232 Plates explained.

Plate CXL.—Fig. 1. The large whalebone or Greenland whale, is from 40 to 60 feet long, and more than one half the length in circumference at the thickeſt part. This whale is taken on account of the oil and the whalebone.

Fig. 2. The narhwal or unicorn-fiſh, yields a ſmall quantity of oil, but it is ſaid to be of a ſuperior quality. The horns or teeth are much valued, and is in ſome reſpects preferable to ivory. They are from 9 to 10 feet long. The fleſh is greatly eſteemed by the inhabitants of Greenland.

Fig. 3. The large ſpermaceti whale, which is taken on account of the oil, and alſo on account of the more valuable ſubſtance ſpermaceti, which is found chiefly in cells within the ſkull. The figure here given is taken from one of the 31 which came on ſhore in 1784, near Audierne in France. The length was 44 feet.

Fig. 4. The grampus. This figure was taken from one caught at the mouth of the Thames in 1759. It was 24 feet long.

Plate CXLI.—Fig. 1. and 2. exhibits a view of the courſe of the blow-hole in the cetaceous fiſhes.

Fig. 1. ſhews the blow-hole of the whalebone and ſpermaceti whale. In the whalebone whale it is double, and the courſe of it is marked by the dotted line ABCD. It is ſingle in the ſpermaceti whale, and marked by the dotted lines AEFD.

Fig. 2. ſhews that of the monodon and delphinus. That of the monodon, which is ſingle, is ſhewn by the dotted line ABCD, terminating at the back part of the

Fig. 1.

Balæna Mysticetus, Large Whale-bone Whale.

Fig. 2. Monodon Monoceros, Narhwal, or Unicorn fish.

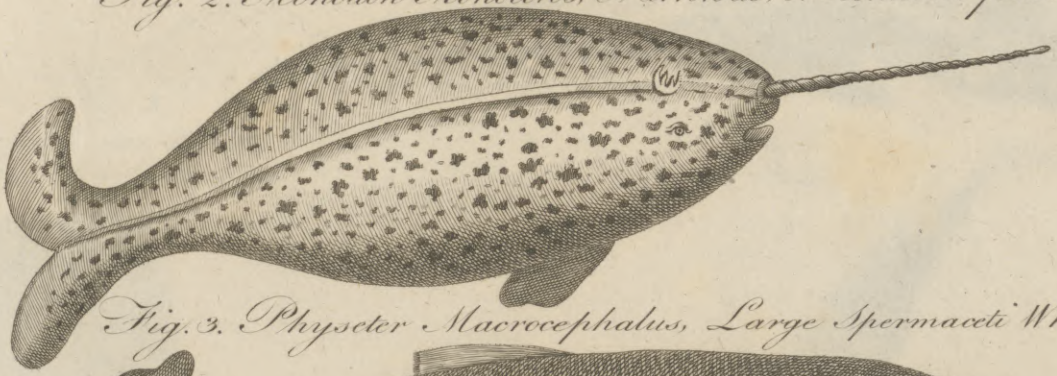


Fig. 3. Physeter Macrocephalus, Large Spermaceti Whale.

Fig. 4. Delphinus Orca, Grampus.

A.Bell Prin. Wal. Sculptor fecit.

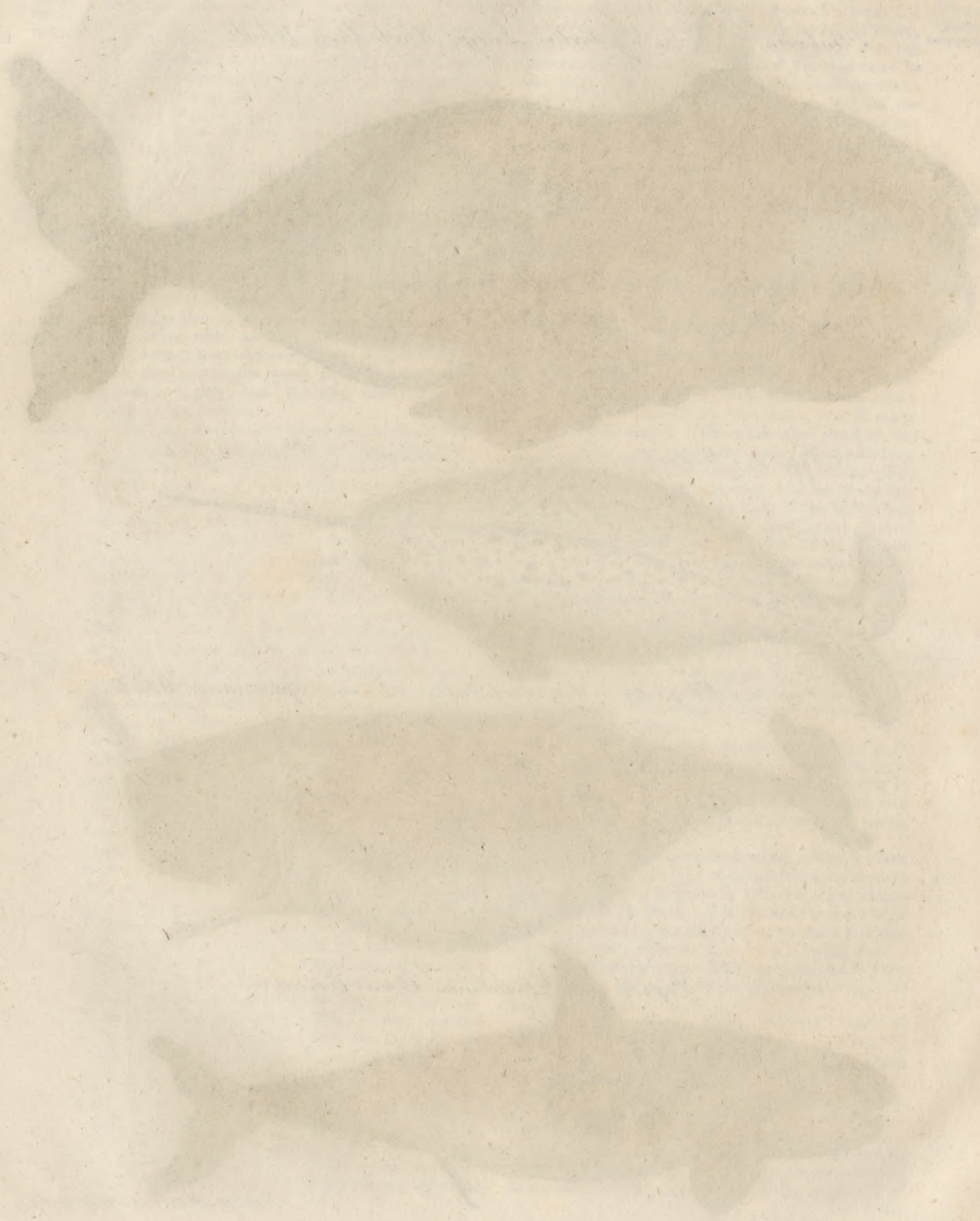


Fig. 1.
Blowhole of the Whalebone and Spermaceti Whale.

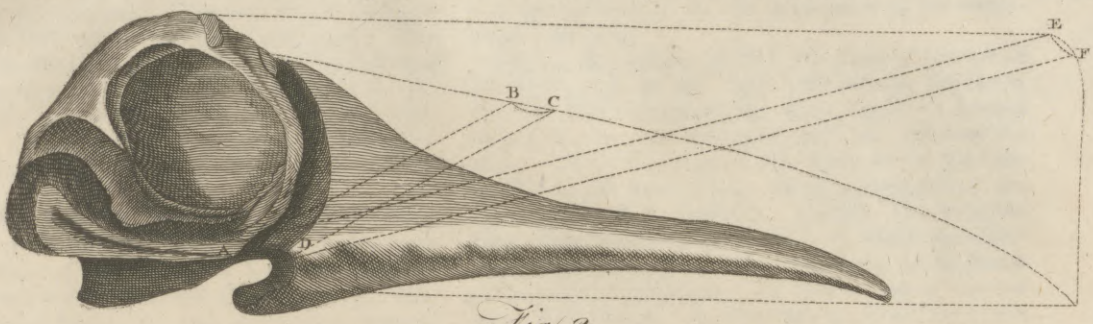


Fig. 2.
Blowhole of the Unicorn fish and Dolphin.

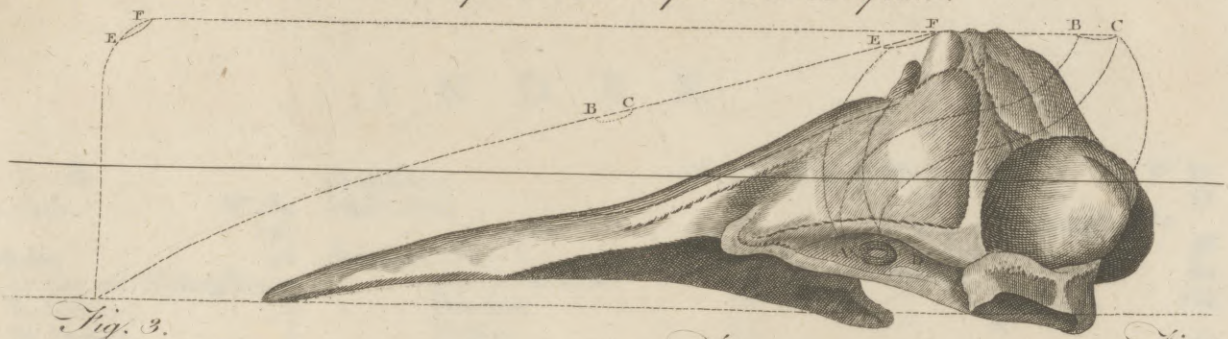


Fig. 3.
Perpendicular View of the Whalebone.

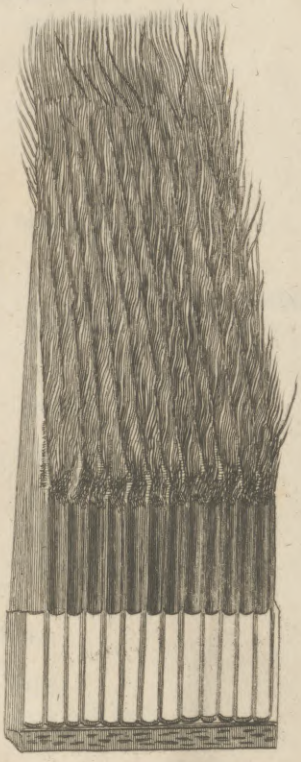


Fig. 4.
Lateral View.

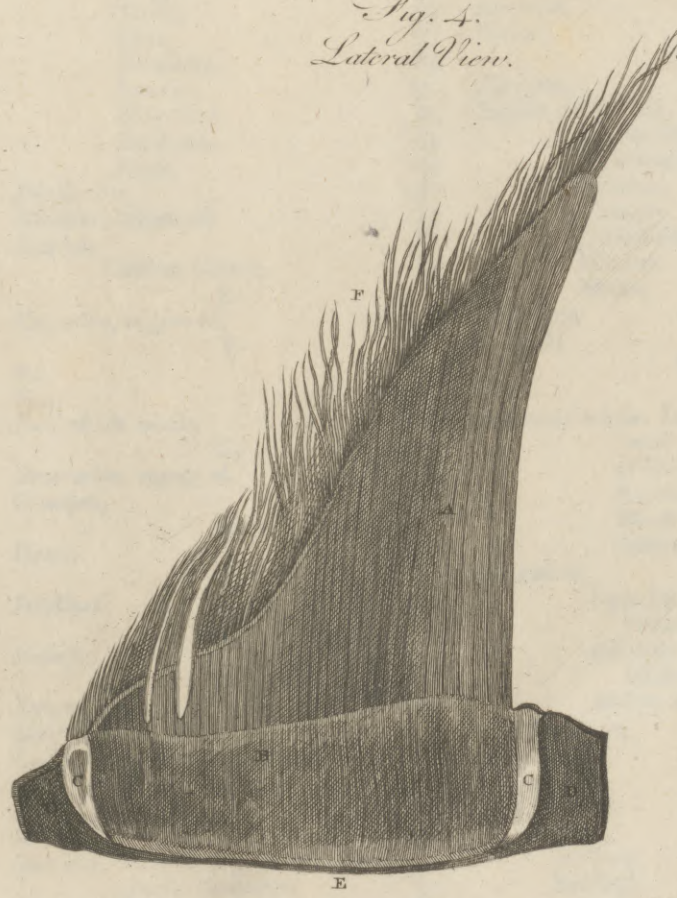
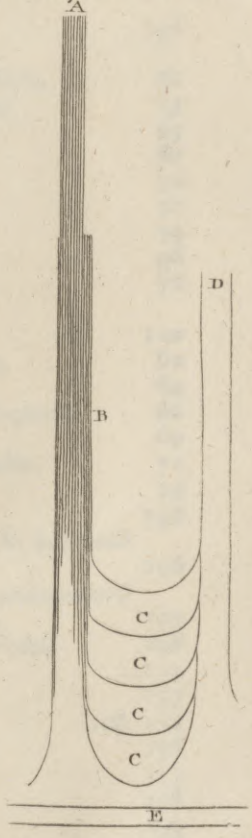


Fig. 5.
Growth of the Whalebone.



A. Bell Prin. et al. Sculptor. fecit.

Whale-Fiſhery

the head. And that of the claſs delphinus by the dotted line AEFD, terminating at the top of the head.

Fig. 3. A perpendicular ſection of ſeveral plates of whalebone in their natural ſituation in the gum. The inner edges or ſhorteſt terminations are removed, and the cut edges ſeen from the inſide of the ſnout. A, the upper part, ſhews the diſtance of the plates from each other. C, the lower part, ſhews the white ſubſtance on which they grow, and the baſis on which they ſtand.

Fig. 4. A ſide view of one of the plates of whalebone. A, the part which projects beyond the gum. B, The portion which is ſunk in the gum. CC, A white ſubſtance which ſurrounds the whalebone, forming there a projecting bead, and alſo paſſing between the plates to form their external lamellæ. DD, The part analogous to the gum. E, A fleſhy ſubſtance covering the jaw-bone, on which the inner lamella of the plate is formed. F, The termination of the whalebone in the hair.

Whale-Fiſhery.

Fig. 5. An outline to ſhew the mode of growth of the plates, and of the white intermediate ſubſtance. A, The middle layer of the plate, which is formed upon a pulp or cone that paſſes up in the centre of the plate. The termination of this layer forms the hair. B, One of the outer layers, which is formed from the intermediate white ſubſtance. CCCC, The intermediate white ſubſtance, the laminæ of which are continued along the middle layer, and form the ſubſtance of the plate of whalebone. D, The outline of another plate of whalebone. E, The baſis on which the plates are formed, which adheres to the jaw-bone.

INDEX.

A.

AGE of the whale, N° 189
Ambergris, 194
Anatomy of whales, 98
Arrangement by Ray and Willoughby, 2
by Linnæus, 3
by Pennant, 4
made a different claſs, 5

B.

Bælæna, Claſs I. 14
general characters, 16
Myſticetus, 17
characters, 17
deſcription, 18
whalebone, 20
ſize, 27
food, 29
dimenſions, 31
Glacialis, 32
characters, 32
deſcription, 33
curious mode of taking, 34
Phyſalus, 35
characters, 35
deſcription, 36
Nodoſa, 40
deſcription, 40
Gibboſa, 42
deſcription, 42
Boops, 44
Muſculus, 46
Roſtrata, 50
Bladder, 139
Blood, 142
Blow-holes, 150
Blubber, 190
Bones, head, 106
neck and back, 107
ribs, 109
Brain, 152

C.

Cete, word limited in ſignification, 10
Circulation, N° 146
Claſſes, four, 14

D.

Delphinus, Claſs IV. 75
general character, 75
Phocæna, 77
Delphis, 82
Turſio, 85
Orca, 87
Gladiator, 89
Leucas, 91
Bidentatus, 93
Butſkopf, 95
Feres, 97
Diaphragm, 149
Digeſtion, organs of, 127
Dolphin, 81
fabulous hiſtory, 83

E.

Excretion, organs of, 138, 139

F.

Fat, 190
Fins, 111
Food of the whale, 169

G.

Generation, organs of, 161, 163
Grampus, 86

H.

Heart, 140

I.

Inteſtines, 128

K.

Kidneys, 138

L.

Larynx, 146
Liver, 135
Lungs, 147

M.

Mammæ, 165
Milk rich, 167
Monodon, Claſs II. 53
generic characters, 53
Monodon Monoceros, N° 55
uſes, 57
magnificent throne of the bones, 58
Spurius, 60
Muſcles, 124

N.

Narhwal, 53-60
Nerves, 155

P.

Pancreas, 136
Phyſeter, Claſs III. 61
generic characters, 61
Macrocephalus, 63
Catodon, 65
Trumpo, 67
Cylindricus, 70
Microps, 72
Mular, 74
Phyſiology, 98
Porpoiſe, 76

S.

Skin, 122
Spermaceti whale, Large, 62
Small, 64
of New England, 66
Round, 69
Black-headed, 71
Mular, 73
Spermaceti, 192
ſuppoſed to be indurated fæces, 196
probably a præternatural ſubſtance, 197
uſed as a perfume, 198
Spinal marrow, 154
Spleen, 137
Stomach, &c. 128, 134
Senſe of touch, 156
taſte, 157
ſmelling, 158
hearing, 159

Senſe

Senſe of ſeeing, N° 160
Sucking, mode of, 166
T.
Teeth, 112-114
U.
Unicorn-fiſh, 53-60
Ureters, 139
W.
Whales, Claſſification, 14
natural hiſtory important, 6
but deficient, 7
organs of digeſtion, 127
of circulation and reſpiration, 140
of generation, 161
food, ſize, abode, 169
Greenland or large whalebone, 17
Iceland, 32
Fin-fiſh, 35
Humpback, 39
Scrag, 41
Pike-headed, 43
Round-lipped, 46
Piked, 49
Bottle-noſe, 81
Whales, Bottle-headed, N° 94
enemies of, 184-188
affection for young, 168
one young at a birth, 164
Whalebone, peculiar ſubſtance, &c. 115-120
firſt introduced, 203
Whale-fiſhery,
Norwegians firſt acquainted with the, 200
Biſcayans moſt expert in, 201
Engliſh firſt engage in, 202
ſhips fitted out from Hull, 204
premium granted for, 205
company eſtabliſhed, 206
Engliſh very ſucceſsful in, 207
New Engliſh company, 208
encouraged, 209
in North America, 210
advantages of the, 211
regulations of, 212
ſtate of the trade in England. 213
Southern, 214
Carried on by Americans ſettled in Milford Haven, 215
Whale-fiſhery partially encouraged, N° 116
Cape of Good Hope a convenient ſtation for, 217
Dutch early engaged in, 218
extent of their, 219
ſhips employed and produce of it from 1661 to 1788, 220, 221
attempt of the French to revive, 222
other nations engage in, 223
time of the, 224
mode practiſed by the Europeans, 225
by the people of Kamtſchatka, 226
their previous ceremonies, 227
by the people of the Kurile iſlands, 228
of Iceland, 229
of Greenland, 230
aſtoniſhing mode by the Floridan Indians, 232

CEU

Cette || Ceuta.

CETTE, a maritime town of France, in Languedoc, ſeated at the place where the canal of Languedoc begins, between Montpellier and Agde, on the bay of Maguelona, in the Mediterranean ſea. E. Long. 3. 15. N. Lat. 43. 25.

CETUS, in *Aſtronomy*, the whale; a large conſtellation of the ſouthern hemiſphere, under Piſces, and next the water of Aquarius. The ſtars in the conſtellation Cetus, in Ptolemy's catalogue, are twenty-two; in Tycho's twenty-one; in Hevelius's forty-five; in the Britannic catalogue ninety-ſeven.

Cetus is repreſented by the poets, as the ſea-monſter which Neptune, at the ſuit of the nymphs, ſent to devour Andromeda for the pride of her mother, and which was killed by Perſeus. In the mandible of Cetus is a variable ſtar which appears and diſappears periodically, paſſing through the ſeveral degrees of magnitude both increaſing and diminiſhing, in about 333 days. See ASTRONOMY.

CEVA, a ſtrong town of Piedmont in Italy, ſeated on the river Tanero, with a ſtrong fort, in E. Long. 8. 8. N. Lat. 44. 20.

CEVENNES, mountains of Languedoc in France, remarkable for the frequent meetings of the Proteſtants there as a place of ſecurity againſt the tyranny of their governors. In Queen Anne's reign there was an attempt made to aſſiſt them by an Engliſh fleet in the Mediterranean; but to no purpoſe, for the French had occupied the paſſages.

CEUTA, a maritime town of Barbary in Africa, and in the kingdom of Fez, ſeated on the ſtraits of Gibraltar, oppoſite that place, in W. Long. 6. 25. N. Lat. 36. 35. John king of Portugal took it from the Moors in 1415, but it now belongs to Spain. In 1697, it ſuſtained a vigorous ſiege by the Moors.

CEY

Ceylon.

CEYLON, a large iſland in the Eaſt Indies, which lies between 5° 40′ and 10° 30′ north latitude; and between 79° and 82° eaſt longitude. It is ſituated at the entrance of the bay of Bengal, by which it is bounded on the north. On the north-weſt it is ſeparated from the Coromandel coaſt by the gulf of Manaar, a narrow ſtrait full of ſhoals, and impaſſable by large ſhips; and is diſtant about 60 leagues from Cape Comorin, the ſouthern point of the peninſula of India. Its circumference is computed to be about 900 miles; and its length from Point Pedro at the northern extremity to Donderhead at the ſouthern is about 300 miles. Its breadth is very unequal, being in ſome parts only from 40 to 50 miles, while in others it extends to 60, 70, and even 100.

The appearance of the eaſtern coaſt is bald and rocky, and a few reefs of rocks run out into the ſea on the ſouth-eaſt between Point de Galle and Batacolo. The deep water on the eaſtern ſhores admits the approach of the largeſt veſſels in ſafety; and if that ſide of the iſland be the leaſt fertile, its other defects are amply compenſated by the harbours of Trincomalee and Batacolo. The north and north-weſt coaſt from Point Pedro to Columbo is flat, and everywhere indented with inlets of the ſea. The largeſt of them extends almoſt quite acroſs the iſland from Mullipatti to Jafnapatam on the north-weſt point of the iſland; and forms the peninſula of Jafnapatam. Several of theſe inlets form ſmall harbours.

The interior of the iſland abounds with ſteep and lofty mountains, covered with thick foreſts, and full of

Ceylon. of almoſt impenetrable jungles. The woods and mountains completely ſurround the dominions of the king of Candy, and ſeem deſtined by nature to defend him againſt thoſe foreign enemies, whoſe ſuperior ſkill and power have deprived him of the open tracts on the ſea-coaſt. The moſt lofty range of mountains divides the iſland nearly into two parts, and ſo completely ſeparates them from each other, that both the climate and ſeaſons on either ſide are eſſentially different. Theſe mountains alſo obſtruct completely the effect of the monſoons, which ſet in periodically from oppoſite ſides of them; ſo that not only the oppoſite ſea-coaſt, but the whole country in the interior ſuffers very little from theſe ſtorms.

The monſoons in Ceylon are connected with thoſe on the Coromandel and Malabar coaſts; but they ſet in much ſooner on the weſtern than the eaſtern ſide of the iſland. On the weſt ſide, where Columbo lies, the rains prevail in the months of May, June, and July, the ſeaſon when they are felt on the Malabar coaſt. This monſoon is uſually extremely violent, being accompanied with dreadful ſtorms of thunder and lightning, together with vaſt torrents of rain, and violent ſouth-weſt winds. During its continuance, the northern parts of the iſland are very little affected, and are even generally dry. In the months of October and November, when the oppoſite monſoon ſets in on the Coromandel coaſt, it is the north of Ceylon which is affected, and ſcarcely any impreſſion of it is felt in the ſouthern parts.

Theſe monſoons paſs ſlightly over the interior, and ſeldom occaſion any conſiderable inconvenience. But this part of the iſland is not altogether freed from the dreadful ſtorms which ſo terribly ravage the tropical climates. During its own periodical ſeaſon, which happens in March and April, the rain pours down in torrents, and the thunder and lightning are terrible.

From the ſituation of this iſland, ſo near the equator, the days and nights are nearly of equal length; the variation during the two ſeaſons not exceeding 15 minutes. The ſeaſons are more regulated by the monſoons than the courſe of the ſun; for although the iſland lies to the north of the line, the cooleſt ſeaſon is during the ſummer ſolſtice, while the weſtern monſoon prevails. Their ſpring commences in October, and the hotteſt ſeaſon is from January to the beginning of April. The heat, during the day, is nearly the ſame throughout the whole year; the rainy ſeaſon, however, renders the nights much cooler, from the dampneſs of the earth, and the prevalence of winds during the monſoons. The climate, upon the whole, is much more temperate than on the continent of India. This temperate climate, however, is chiefly confined to the coaſt where the ſea breezes have room to circulate. In the interior of the country, owing to the thick and cloſe woods, and the hills which crowd upon each other, the heat is many degrees greater than on the ſea coaſt, and the climate often extremely ſultry and unhealthy.

The principal harbours in the iſland for large ſhips, are Trincomalee and Point de Galle; they alſo come to anchor, and at certain ſeaſons of the year moor ſecurely, in the roads of Columbo. There are ſeveral other inferior ports round the iſland, which afford ſhelter to the ſmaller coaſting veſſels.

The two principal rivers are the Malivagonga and the Mulivaddy. The former takes its riſe among the hills to the ſouth-eaſt of Candy, and nearly ſurrounds that city. After a variety of circuitous windings among the mountains, it at laſt diſcharges itſelf into the ſea at Trincomalee. This river is ſo deep as to be fordable only towards the ſource; but the rocks, which everywhere break its courſe, prevent it from being navigated. The Mulivaddy riſes from the foot of a very high mountain, known to Europeans by the name of Adam's Peak, and ſituated about ſixty miles to the north-eaſt of Columbo. This river falls into the ſea by ſeveral branches: the largeſt of theſe empties itſelf about three miles from the fort of Columbo, after having nearly ſurrounded a large tract of the level country, of which it forms a peninſula. Ceylon.

Beſides the rivers with which Ceylon abounds, there are many lakes and canals communicating with them, particularly in the neighbourhood of Columbo and Nigumbo. They are often of conſiderable extent, and of great utility to the inhabitants in their neighbourhood, who have thus an opportunity of readily tranſporting their ſeveral articles of trade; and it is by this means alſo that the towns on the coaſt are ſupplied with the greateſt abundance of freſh-water fiſh.

The internal communications by land through the iſland have ſcarcely paſſed the firſt ſtage of improvement. Along the ſea-coaſts indeed there are roads and ſtations for travellers; but theſe roads are in many places rugged and ſteep.

The ſoil in general, is ſandy, with a ſmall mixture of clay. In the ſouth-weſt parts, particularly about Columbo, there is a great deal of marſhy ground, very rich and productive. This tract, however, is chiefly occupied with cinnamon plantations, and the reſt of the iſland, in its preſent ſtate of cultivation, does not produce a ſufficient quantity of rice for the conſumption of its inhabitants.

Ceylon was originally divided into a number of diſtinct petty kingdoms, ſeparated by the ſeveral rivers and mountains which are diſperſed over the face of the iſland, and ſubject each to its own independent ſovereign. In proceſs of time, however, the whole country was reduced under the dominion of the king of Candy, and divided by him into a few great provinces, from which ſeveral of the numerous titles he ſtill retains were derived. Theſe provinces were Candy, Coitu, Matura, Dambadar, and Sittivacca, which included the rich diſtricts on the weſt coaſt. The chief of theſe provinces was Candy, ſituated in the centre of the iſland, and honoured with the royal reſidence. The king holds his court there to this day; and though all the other provinces have been more or leſs encroached upon, no part of Candy has ever been reduced to permanent ſubjection under a foreign power. The great diviſions of the iſland now are reduced to two; the one comprehending thoſe parts under the dominion of Europeans, and the other thoſe which ſtill remain to the natives.

Little was known of the iſland of Ceylon previous to the arrival of the Portugueſe in 1505, who were admitted by the king of the country in a friendly manner, and received from him an annual tribute for their protection againſt external invaſion, particularly againſt the attacks of the Arabs, who had long haraſſed and

Ceylon. oppreſſed the Ceyloneſe. The inhabitants at that time, as at preſent, conſiſted of two diſtinct races, the Bedahs, who lived in the foreſts, particularly in the northern parts, and the Cingleſe, who inhabited the ſea coaſt. Columbo, now the European capital of Ceylon, was at that time the royal reſidence. Cinnamon was even then the chief product and ſtaple commodity of the country. Two hundred and fifty thouſand pounds weight were annually delivered by the king to the Portugueſe in name of tribute. The inhabitants ſuffered great cruelties and oppreſſions under the Portugueſe, and were glad of an opportunity of throwing off the yoke and putting themſelves under the protection of the Dutch. In 1632, a ſtrong armament was ſent out by the latter to act in concert with the native prince; and, after a bloody ſtruggle, the Portugueſe were at laſt expelled from the iſland. Columbo ſurrendered to the Dutch arms in 1656, and this terminated the dominion of the Portugueſe in the iſland. In the year 1795, a body of Britiſh troops was ſent for the conqueſt of Ceylon, and after various military operations, this valuable poſſeſſion was added to the Britiſh colonies.

The chief towns in Ceylon are Trincomalee and Columbo. Trincomalee lies in latitude 8° 30′. It runs in a north-eaſt direction along one branch of the bay. The country around it is mountainous and woody; the ſoil uncultivated and rather barren, and the whole appearance wild.

Trincomalee, from its ſituation and conſtruction, is naturally ſtrong. It occupies more ground than Columbo, but contains a much ſmaller number of houſes, and thoſe inferior in ſize and appearance to thoſe which are to be met with in ſeveral towns on the ſouth-weſt coaſt. The circumference of Trincomalee, within the walls, is about three miles: within this ſpace is alſo included a hill or riſing point, immediately over the ſea, and covered with bruſhwood.

The fort is ſtrong, and commands the principal bays; and, in particular, the entrance into the grand harbour, or inner bay, which affords at all ſeaſons, and in every variety of weather, a ſecure ſhelter to ſhips of all deſcriptions, being land-locked on all ſides, and ſufficiently deep and capacious to receive any number of the largeſt veſſels.

This harbour, from its nature and ſituation, is that which ſtamps Ceylon one of our moſt valuable acquiſitions in the Eaſt Indies. As ſoon as the violent monſoons commence, every veſſel which is caught by them in any other part of the bay of Bengal, is obliged immediately to put to ſea to prevent inevitable deſtruction. At theſe ſeaſons Trincomalee and Bombay alone, of all the ports on the different coaſts of the peninſula of India, are capable of affording a ſafe retreat. The incalculable advantages to be derived from ſuch a harbour, are increaſed by its proximity and eaſy acceſs to our ſettlements in the bay of Bengal.

Columbo is the capital of Ceylon and the ſeat of government. Although Trincomalee, on account of its ſituation and harbour, be of more conſequence to this nation to retain, yet Columbo in every other reſpect is greatly ſuperior. The number of its inhabitants is much greater; its fort and black town are much larger; the country where it is ſituated is far more fertile, and the rich diſtrict depending upon it much wider, being not leſs than 20 leagues in length, and 10 in breadth. It is ſituated in the weſt, or rather towards the ſouth-weſt part of the iſland, in about 7° north latitude, and 78° eaſt longitude from London. Ceylon.

The plan of Columbo is regular. It is nearly divided into four equal quarters by two principal ſtreets, which croſs each other, and extend the whole length of the town. To theſe, ſmaller ones run parallel, with connecting lanes between them. At the foot of the ramparts on the inſide is a broad ſtreet or way, which goes round the whole fort, and communicates with the baſtions and ſoldiers barracks; and alſo affords, at the different angles, open ſpaces for their private parading.

Beſide the European inhabitants of Ceylon, the natives are quite diſtinct from each other in manners and civilization. The Cingleſe, who inhabit the low lands and parts contiguous to the coaſts, live entirely under the dominion of whatever European nation has been able to acquire poſſeſſion of that part of the iſland. The nature of the country they inhabit indeed leaves them hardly any alternative but unconditional ſubmiſſion, unleſs they could either meet the Europeans in open battle, or conſent to quit their plentiful fields for the barren mountains of the interior.

They are a quiet, inoffenſive people; exceedingly grave, temperate, and frugal. Their bodies partake of the indolence of their minds, and it is with reluctance they are rouſed to any active exertion. When, however, they are obliged to apply themſelves to any work, ſuch as agriculture, they are capable of undergoing a great deal of labour.

The milder virtues form the moſt prominent features of the Cingleſe character. They are gentle, charitable, and friendly, and have ſcarcely any of the falſe, treacherous, and deſigning arts which are often found among the Candians. With much leſs ſmoothneſs and courteouſneſs of face and manner than the latter, they have much ſincerer hearts. On examining the countenances and carriage of theſe two claſſes of Ceyloneſe, it is eaſy to perceive the difference ariſing from the reſpective circumſtances in which they are placed. The countenance of the Candian is erect, his look haughty, his mien lofty, and his whole carriage marked by the pride of independence.

The looks of the Cingleſe even denote a degree of effeminacy and cowardice, which excites the contempt of the Candians; although the latter, with all their boaſted ſpirit, can never venture to attack an European but by the ſame method as the Cingleſe, and are equally cautious in waiting the convenient moment of aſſaulting him from the buſhes, in which they have concealed themſelves.

The moſt ſingular part of the inhabitants of Ceylon are the Bedahs, or Vaddahs. The origin of the Bedahs or Vaddahs, who inhabit the deepeſt receſſes of the Ceyloneſe foreſts, has never been traced, as no other race can be found in the eaſtern world which correſponds with them. Conjecture has, indeed, been buſy on the occaſion, as it uſually is where real information is wanting. The Bedahs are generally ſuppoſed to have been the aboriginal inhabitants of the iſland, who, upon being overwhelmed by their Cingleſe invaders, preferred the independence of ſavages to a tame ſubmiſſion. A current tradition, however,

Ceylon. ever, aſſigns them a different origin. It is related that they were caſt away on the iſland, and choſe to ſettle there; but refuſing, upon a certain occaſion, to aſſiſt the king in his wars againſt ſome foreign enemies, they were driven out from the ſociety of the natives, and forced to take up their abode in the moſt unfrequented foreſts. Some imagine that the Bedahs are merely a part of the native Candians, who choſe to retain their ancient ſavage freedom, when their brethren of the plains and vallies ſubmitted to the cultivation of the earth, and the reſtraints of ſociety. This opinion reſts entirely on thoſe Bedahs, who are moſt known, ſpeaking a broken dialect of the Cingleſe. It is, however, by no means aſcertained that this is the univerſal language of the Bedahs; nor is any account of their origin ſupported by the ſlighteſt ſhadow of proof.

Among the animals of Ceylon, and at the head of the claſs of quadrupeds, is the elephant, which is conſidered as ſuperior to thoſe found in any other part of the world. The oxen are of very ſmall ſize, ſcarcely exceeding that of calves of a year old. They are of that ſpecies which have the hump on the ſhoulder; but are inferior in quality, as well as in ſize, to any found on the Indian continent. The beef is ſometimes of a good quality, and forms the chief food of the European ſoldiers. Buffaloes are found in great numbers in the iſland, both in a wild and tame ſtate. They are wild and untractable; and even when tamed and trained to the draught, for which, being ſtronger and larger than the oxen, they are well adapted, they retain a good deal of their original manners. A variety of deer and elks are found in Ceylon; eſpecially the gazelle, a very ſmall ſpecies, about the ſize of our hare, which is caught by the natives and brought to market in cages, where they are ſold for about 1s. a piece. Hares, ſimilar to the European, abound in every part of the iſland; a ſmall ſpecies of tyger, the tyger cat, the leopard, the jackal, porcupines, racoons, ſquirrels, and ſometimes, but rarely, the hyena and the bear, are found in Ceylon. Birds, inſects, ſerpents, and other reptiles, ſuch as are uſually to be met with in the larger iſlands of the Indian ocean, or on the neighbouring continent, are common in this iſland.

Ceylon abounds in all the vegetables and fruits which are found within the tropical regions. But among the vegetable productions of Ceylon, the moſt valuable, and what may be reckoned the ſtaple commodity of the iſland, is the cinnamon.

The principal woods, or gardens, as they are called, where the cinnamon is procured, lie in the neighbourhood of Columbo. The grand garden near the town is ſo extenſive as to occupy a tract of country from 10 to 15 miles in length, and ſtretching along from the north-eaſt to the ſouth of the diſtrict. Nature has here concentrated both the beauty and the riches of the iſland. Nothing can be more delightful to the eye than the proſpect which ſtretches around Columbo. The low cinnamon trees which cover the plain allow the view to reach the groves of evergreens, interſperſed with tall clumps, and bounded everywhere with extenſive ranges of cocoa-nut and other large trees. The whole is diverſified with ſmall lakes and green marſhes, ſkirted all around with rice and paſture fields. In one part the intertwining cinnamon trees appear completely to clothe the face of the plain; in another, the openings made by the interſecting footpaths juſt ſerve to ſhew that the thick underwood has been penetrated. Ceylon.

The ſoil beſt adapted for the growth of the cinnamon is a looſe white ſand. Such is the ſoil of the cinnamon gardens around Columbo, as well as in many parts around Nigumbo and Caltura, where this ſpice is found of the ſame ſuperior quality. Of late years little is procured from the interior; and what is brought thence is coarſer and thicker in the appearance, and of a hot pungent taſte.

As this ſpice conſtitutes the wealth of Ceylon, great pains are taken to aſcertain its quality, and to propagate the choiceſt kinds. The prime ſort, and that which grows in the gardens around Columbo, is procured from the *laurus cinnamomum*. This is a tree of a ſmall ſize, from four to ten feet in height: the trunk is ſlender, and like ſeveral of our ſhrubs, a number of branches and twigs ſhoot out from it on every ſide. The wood is ſoft, light, and porous, in appearance much reſembling that of our oſier; and when barked it is chiefly fit for fuel, to which uſe it is commonly converted. It is, however, ſometimes ſawed into planks, and manufactured into caddies and other pieces of furniture; but its ſcent does not ſecure it from the attacks of the worms.

The cinnamon tree produces a ſpecies of fruit reſembling an acorn, but not ſo large, which ripens about the latter end of autumn, and is gathered by the natives for the purpoſe of extracting the oil. The proceſs they employ is to bruiſe the fruit, boil it, and ſkim off the oil: this they uſe for their hair and body on great occaſions, and alſo for burning in their lamps. When mixed with cocoa-nut oil, it gives extremely good light. The kings of Candy uſe it for this purpoſe, and formerly commanded their ſubjects to bring them a certain quantity as a yearly tribute. When any ambaſſadors are ſent to theſe princes, they always burn this oil during the time of audience.

The pearl-fiſhery in the bay of Condatchy, during the ſeaſon, exhibits one of the moſt intereſting ſcenes in Ceylon. The banks, where it is carried on, extend ſeveral miles along the coaſt from Manaar ſouthward, off Arippo, Condatchy, and Pomparipo. The principal bank is oppoſite to Condatchy, and lies out at ſea about 20 miles. The firſt ſtep, previous to the commencement of the fiſhery, is to have the different oyſter banks ſurveyed, the ſtate of the oyſters aſcertained, and a report made on the ſubject to government. If it has been found that the quantity is ſufficient, and that they are arrived at a proper degree of maturity, the particular banks to be fiſhed that year are put up for ſale to the higheſt bidder, and are uſually purchaſed by a black merchant. Government ſometimes judges it more advantageous to fiſh the banks on its own account, and to diſpoſe of the pearls afterwards to the merchants. When this plan is adopted, boats are hired for the ſeaſon on account of government, from different quarters; the price varies conſiderably, according to circumſtances; but is uſually from 500 to 800 pagodas for each boat.

As neither the ſeaſon, nor the convenience of the perſons attending, would permit the whole of the banks to be fiſhed in one year, they are divided into three or four different portions, which are fiſhed one portion annually in ſucceſſion. The different portions are completely diſtinct, and are ſet up ſeparately to ſale,

Ceylon. each in the year in which it is to be fiſhed. By this means a ſufficient interval is given to the oyſters, to attain their proper growth; and as the portion firſt uſed has generally recovered its maturity by the time the laſt portion has been fiſhed, the fiſhery becomes almoſt regularly annual, and may thus be conſidered as yielding a yearly revenue. The oyſters are ſuppoſed to attain their completeſt ſtate of maturity in ſeven years; for, if left too long, it is ſaid that the pearl becomes ſo large and inconvenient to the fiſh, that it throws it out of the ſhell.

The fiſhing ſeaſon commences in February, and ends about the beginning of April. The period allowed to the merchant to fiſh the banks is ſix weeks, or two months at the utmoſt; but there are ſeveral interruptions, which prevent the fiſhing days from exceeding more than about thirty. If it happens to be a very bad ſeaſon, and many ſtormy days intervene during the period allotted, the purchaſer of the fiſhery is often allowed a few days more as a favour.

During the ſeaſon, all the boats regularly ſail and return together. A ſignal gun is fired at Arippo, about ten o'clock at night, when the whole fleet ſets ſail with the land breeze. They reach the banks before daybreak; and at ſunriſe commence fiſhing. In this they continue buſily occupied till the ſea breeze, which ariſes about noon, warns them to return to the bay. As ſoon as they appear within ſight, another gun is fired, and the colours hoiſted, to inform the anxious owners of their return. When the boats come to land, their cargoes are immediately taken out, as it is neceſſary to have them completely unloaded before night. Whatever may have been the ſucceſs of their boats, the owners ſeldom wear the looks of diſappointment; for, although they may have been unſucceſsful one day, they look with the moſt complete aſſurance of better fortune to the next; as the Brahmins and conjurers, whom they implicitly truſt in defiance of all experience, underſtand too well the liberality of a man in hopes of good fortune, not to promiſe them all they can deſire.

Each of the boats carries 20 men, with a *tindal* or chief boatman, who acts as pilot. Ten of the men row and aſſiſt the divers in re-aſcending. The other ten are divers; they go down into the ſea by five at a time; when the firſt five come up the other five go down, and by this method of alternately diving, they give each other time to recruit themſelves for a freſh plunge.

In order to accelerate the deſcent of the divers, large ſtones are employed: five of theſe are brought in each boat for the purpoſe; they are of a reddiſh granite, common in this country, and of a pyramidal ſhape, round at top and bottom, with a hole perforated through the ſmaller end ſufficient to admit a rope. Some of the divers uſe a ſtone ſhaped like a half-moon, which they faſten round the belly when they mean to deſcend, and thus keep their feet free.

Theſe people are accuſtomed to dive from their very infancy, and fearleſsly deſcend to the bottom in from four to ten fathom water, in ſearch of the oyſters. The diver, when he is about to plunge, ſeizes the rope, to which one of the ſtones we have deſcribed is attached, with the toes of his right foot, while he takes hold of a bag of net-work with thoſe of his left; it being cuſtomary among all the Indians to uſe their toes in working or holding as well as their fingers, and Ceylon. ſuch is the power of habit that they can pick up even the ſmalleſt thing from the ground with their toes as nimbly as an European could do with his fingers. The diver thus prepared, ſeizes another rope with his right hand, and holding his noſtrils ſhut with the left, plunges into the water, and by the aſſiſtance of the ſtone ſpeedily reaches the bottom. He then hangs the net round his neck, and with much dexterity, and all poſſible deſpatch, collects as many oyſters as he can while he is able to remain under water, which is uſually about two minutes. He then reſumes his former poſition, makes a ſignal to thoſe above by pulling the rope in his right hand, and is immediately by this means drawn up and brought into the boat, leaving the ſtone to be pulled up afterwards by the rope attached to it.

The exertion undergone during this proceſs is ſo violent, that upon being brought into the boat, the divers diſcharge water from their mouth, ears, and noſtrils, and frequently even blood. But this does not hinder them from going down again in their turn. They will often make from 40 to 50 plunges in one day; and at each plunge bring up about 100 oyſters. Some rub their bodies over with oil, and ſtuff their ears and noſes to prevent the water from entering; while others uſe no precautions whatever. Although the uſual time of remaining under water does not much exceed two minutes, yet there are inſtances known of divers who could remain four and even five minutes. The longeſt inſtance ever known was that of a diver who came from Anjango in 1797, and who abſolutely remained under water full ſix minutes.

The boat-owners and merchants are very apt to loſe many of the beſt pearls while the boats are on their return to the bay from the banks, as the oyſters when alive and left for ſome time undiſturbed frequently open their ſhells of their own accord: a pearl may then be eaſily diſcovered, and the oyſter prevented by means of a bit of graſs or ſoft wood from again cloſing its ſhell, till an opportunity offers of picking out the pearl. Thoſe fellows who are employed to ſearch among the fiſh alſo commit many depredations, and even ſwallow the pearls to conceal them; when this is ſuſpected, the plan followed by the merchants is to lock the fellows up, and give them ſtrong emetics and purgatives, which have frequently the effect of diſcovering the ſtolen goods.

As ſoon as the oyſters are taken out of the boats, they are carried by the different people to whom they belong and placed in holes or pits dug in the ground to the depth of about two feet, or in ſmall ſquare places cleared and fenced round for the purpoſe; each perſon having his own ſeparate diviſion. Mats are ſpread below them to prevent the oyſters from touching the earth; and here they are left to die and rot. As ſoon as they have paſſed through a ſtate of putrefaction, and have become dry, they are eaſily opened without any danger of injuring the pearls, which might be the caſe if they were opened freſh, as at that time to do ſo requires great force. On the ſhell being opened, the oyſter is minutely examined for the pearls: it is uſual even to boil the oyſter, as the pearl, though commonly found in the ſhell, is not unfrequently contained in the body of the fiſh itſelf.

The pearls found at this fiſhery are of a whiter colour than thoſe got in the gulf of Ormus on the Arabian

Ceylon.

bian coaſt, but in other reſpects are not accounted ſo pure or of ſuch an excellent quality; for though the white pearls are more eſteemed in Europe, the natives prefer thoſe of a yellowiſh or golden caſt. Off Tutucoreen, which lies on the Coromandel coaſt, nearly oppoſite to Condatchy, there is another fiſhery; but the pearls found there are much inferior to the two ſpecies now mentioned, being tainted with a blue or grayiſh tinge.

In preparing the pearls, particularly in drilling and ſtringing them, the black people are wonderfully expert. The inſtrument they employ in drilling, is a machine made of wood, and of a ſhape reſembling an obtuſe inverted cone, about ſix inches in length, and four in breadth, which is ſupported upon three feet, each 12 inches long. In the upper flat ſurface of this machine, holes or pits are formed to receive the larger pearls, the ſmaller ones being beaten in with a little wooden hammer. The drilling inſtruments are ſpindles of various ſizes according to that of the pearls; they are turned round in a wooden head by means of a bow handle to which they are attached. The pearls being placed in the pits which we have already mentioned, and the point of the ſpindle adjuſted to them, the workman preſſes on the wooden head of the machine with his left hand, while his right is employed in turning round the bow handle. During the proceſs of drilling, he occaſionally moiſtens the pearl by dipping the little finger of his right hand in a cocoa-nut filled with water which is placed by him for that purpoſe; this he does with a dexterity and quickneſs which ſcarcely impedes the operation, and can only be acquired by much practice.

They have alſo a variety of other inſtruments, both for cutting and drilling the pearls. To clean, round, and poliſh them to that ſtate in which we ſee them, a powder made of the pearls themſelves is employed. Theſe different operations in preparing the pearls occupy a great number of the black men in various parts of the iſland. In the black town of Columbo, in particular, many of them may every day be ſeen at this work.

Putallom is remarkable for its ſalt-pans. This place before the arrival of Europeans on the iſland, ſupplied the natives with ſalt; and on account of its convenient ſituation, was pitched upon by the Dutch for manufacturing the ſalt with which they ſupplied the king of Candy's dominions, according to the articles of their treaty with him. The ſalt-pans are formed by an arm of the ſea which overflows part of the country between Putallom and Calpenteen. A very large quantity of ſalt was manufactured here by the Dutch; they looked upon it as of the higheſt importance to their intereſts in the iſland, and the moſt formidable weapon which it was in their power to employ againſt the native king, as it was impoſſible for him to procure any but through their means. The Dutch enacted ſevere laws to prevent individuals from manufacturing or trading in this article, the government taking upon itſelf the management of the works and the care of ſupplying both its own ſubjects and the Candians. In order to keep a conſtant check on the latter, the Dutch were careful not to allow them too great a quantity at once; and whatever remained at Putallom after ſupplying the demands of each year they deſtroyed, that it might not be ſeized upon by ſurpriſe. But this manufacture has been greatly neglected, it is ſaid, ſince the iſland came into the poſſeſſion of the Britiſh.

Chace || Chæronea.

CHACE. See CHASE.

CHACO, a large country of South America, ſituated between 19° and 37° S. Lat. It belongs to the Spaniards, by whom it was conquered in 1536. It is not naturally fruitful; but abounds in gold mines, which are ſo much the more valuable that they are eaſily worked. The works are carried on by about 8000 blacks, who deliver every day to their maſters a certain quantity of gold; and what they can collect above this belongs to themſelves; as well as what they find on thoſe days that are conſecrated to religion and reſt, upon condition that during the feſtival they maintain themſelves. This enables many of them to purchaſe their liberty; after which they intermarry with the Spaniards.

CHADCHOD, in Jewiſh antiquity. Ezekiel mentions *chadchod* among the ſeveral merchandiſes which were brought to Tyre. The old interpreters, not very well knowing the meaning of this term, continued it in their tranſlation. St Jerome acknowledges that he could not diſcover the interpretation of it. The Chaldee interprets it pearls; others think that the onyx, ruby, carbuncle, cryſtal, or diamond, is meant by it.

CHÆRONEA, in *Ancient Geography*, the laſt town, or rather the laſt village, of Bœotia, towards Phocis; the birth place of Plutarch; famous for the fatal defeat of the confederate Greeks by Philip of Macedon. This place was conſidered by Philip as well adapted to the operations of the Macedonian phalanx; and the ground for his encampment, and afterwards the field of battle, were choſen with equal ſagacity; having in view on one ſide a temple of Hercules, whom the Macedonians regarded as the author of their royal houſe, and the high protector of their fortune; and on the other the banks of the Thermodon, a ſmall river flowing into the Cephiſſus, announced by the oracles of Greece as the deſtined ſcene of deſolation and woe to their unhappy country. The generals of the confederate Greeks had been much leſs careful to avail themſelves of the powerful ſanctions of ſuperſtition. Unreſtrained by inauſpicious ſacrifices, the Athenians had left the city at the exhortation of Demoſthenes, to wait no other omen but the cauſe of their country. Regardleſs of oracles, they afterwards advanced to the ill-fated Thermodon, accompanied by the Thebans, and the ſcanty reinforcements raiſed by the iſlands and ſtates of Peloponneſus which had joined their alliance. Their army amounted to 30,000 men, animated by the nobleſt cauſe for which men can fight, but commanded by the Athenians Lyſicles and Chares; the firſt but little, and the ſecond unfavourably, known; and by Theagenes the Theban, a perſon ſtrongly ſuſpected of treachery: all three creatures of cabal and tools of faction, ſlaves of intereſt or voluptuouſneſs, whoſe characters (eſpecially as they had been appointed to command the only ſtates whoſe ſhame, rather than virtue, yet oppoſed the public enemy) are alone ſufficient to prove that Greece was ripe for ruin.

When the day approached for aboliſhing the tottering independence of thoſe turbulent republics, which their own internal vices, and the arms and intrigues of Philip,

Chæronea. Philip, had been gradually undermining for 22 years, both armies formed in battle array before the riſing of the ſun. The right wing of the Macedonians was headed by Philip, who judged proper to oppoſe in perſon the dangerous fury of the Athenians. His ſon Alexander, only 19 years of age, but ſurrounded by experienced officers, commanded the left wing, which faced the Sacred Band of the Thebans. The auxiliaries of either army were poſted in the centre. In the beginning of the action, the Athenians charged with impetuoſity, and repelled the oppoſing diviſions of the enemy; but the youthful ardour of Alexander obliged the Thebans to retire, the Sacred Band being cut down to a man. The young prince completed their diſorder, by purſuing the ſcattered multitude with his Theſſalian cavalry.

Meantime the Athenian generals, too much elated with their firſt advantage, loſt the opportunity to improve it; for having repelled the centre and right wing of the Macedonians, except the phalanx, which was compoſed of choſen men, and immediately commanded by the king, they, inſtead of attempting to break this formidable body by attacking it in flank, preſſed forward againſt the fugitives, the inſolent Lyſicles exclaiming in vain triumph, "Purſue, my brave countrymen! let us drive the cowards to Macedon." Philip obſerved this raſh folly with contempt; and ſaying to thoſe around him, "Our enemies know not how to conquer," commanded his phalanx, by a rapid evolution, to gain an adjacent eminence, from which they poured down, firm and collected, on the advancing Athenians, whoſe confidence of ſucceſs had rendered them totally inſenſible to danger. But the irreſiſtible ſhock of the Macedonian ſpear converted their fury into deſpair. Above a thouſand fell, two thouſand were taken priſoners; the reſt eſcaped by a precipitate and ſhameful flight. Of the Thebans more were killed than taken. Few of the confederates periſhed, as they had little ſhare in the action, and as Philip, perceiving his victory to be complete, gave orders to ſpare the vanquiſhed, with a clemency unuſual in that age, and not leſs honourable to his underſtanding than his heart; ſince his humanity thus ſubdued the minds, and gained the affections of his conquered enemies.

According to the Grecian cuſtom, the battle was followed by an entertainment; at which the king preſiding in perſon, received the congratulations of his friends, and the humble ſupplications of the Athenian deputies, who craved the bodies of their ſlain. Their requeſt, which ſerved as an acknowledgment of their defeat, was readily granted; but before they availed themſelves of the permiſſion to carry off their dead, Philip, who with his natural intemperance had protracted the entertainment till morning, iſſued forth with his licentious companions to viſit the field of battle; their heads crowned with feſtive garlands, their minds intoxicated with the inſolence of wine and victory: yet the ſight of the ſlaughtered Thebans, which firſt preſented itſelf to their eyes, and particularly the ſacred band of friends and lovers, who lay covered with honourable wounds on the ſpot where they had been drawn up to fight, brought back theſe inſolent ſpectators to the ſentiments of reaſon and humanity. Philip beheld the awful ſcene with a mixture of admiration and pity; and, after an affecting ſilence, denounced a ſolemn curſe againſt thoſe who baſely ſuſpected the friendſhip of ſuch brave men to be tainted with criminal and infamous paſſions. Chæronea ‖ Chaff-cutter.

But this ſerious temper of mind did not laſt long; for having proceeded to that quarter of the field where the Athenians had fought and fallen, the king abandoned himſelf to all the levity and littleneſs of the moſt petulant joy. Inſtead of being impreſſed with a deep ſenſe of his recent danger, and with dutiful gratitude to Heaven for the happineſs of his eſcape, and the importance of his victory, Philip only compared the boaſtful pretenſions with the mean performances of his Athenian enemies; and, ſtruck by this contraſt, rehearſed, with the inſolent mockery of a buffoon, the pompous declaration of war lately drawn up by the ardent patriotiſm and too ſanguine hopes of Demoſthenes. It was on this occaſion that the orator Demades at once rebuked the folly, and flattered the ambition, of Philip, by aſking him, Why he aſſumed the character of Therſites when fortune aſſigned him the part of Agamemnon?

Whatever might be the effect of this ſharp reprimand, it is certain that the king of Macedon indulged not, on any future occaſion, a vain triumph over the vanquiſhed. When adviſed by his generals to advance into Attica, and to render himſelf maſter of Athens, he only replied, "Have I done ſo much for glory, and ſhall I deſtroy the theatre of that glory?" His ſubſequent conduct correſponded with the moderation of this ſentiment. He reſtored without ranſom the Athenian priſoners; who, at departing, having demanded their baggage, were alſo gratified in this particular; the king pleaſantly obſerving, that the Athenians ſeemed to think he had not conquered them in earneſt. Soon afterwards he diſpatched his ſon Alexander, and Antipater the moſt truſted of his miniſters, to offer them peace on ſuch favourable terms as they had little reaſon to expect. They were required to ſend deputies to the iſthmus of Corinth, where, to adjuſt their reſpective contingents of troops for the Perſian expedition, Philip purpoſed aſſembling early in the ſpring a general convention of all the Grecian ſtates: they were ordered to ſurrender the iſle of Samos, which actually formed the principal ſtation of their fleet, and the main bulwark and defence of all their maritime or inſular poſſeſſions; but they were allowed to enjoy, unmoleſted, the Attic territory, with their hereditary form of government.

CHÆROPHYLLUM, CHERVIL. See BOTANY *Index*.

CHÆTODON. See ICHTHYOLOGY *Index*. This fiſh is a native of the Eaſt Indies, where it frequents the ſides of the ſea and rivers in ſearch of food; from its ſingular manner of obtaining which it receives its name. When it ſpies a fly ſitting on the plants that grow in ſhallow water, it ſwims to the diſtance of four, five, or ſix feet; and then, with a ſurpriſing dexterity, it ejects out of its tubular mouth a ſingle drop of water, which never fails ſtriking the fly into the water, where it ſoon becomes its prey.

CHAFF, in *Huſbandry*, the huſks of the corn, ſeparated by ſcreening or winnowing it. It ſignifies alſo the rind of corn, and ſtraw cut ſmall for the uſe of cattle.

Chaff-Cutter, a machine for making chaff to feed horſes.

Chaff-cutter || Chaffery.

horſes.—The advantages of an eaſy and expeditious method of cutting ſtraw into chaff, by an engine which could be uſed by common labourers have been long acknowledged; and various attempts have been made to bring ſuch an engine to perfection. But the objections to moſt of them have been their complicated ſtructure, their great price, and the noiſe they make in working; all which inconveniences ſeem to have been lately removed by an invention of Mr James Pike watchmaker at Newton Abbot in Devonſhire. Of his engine, which is of a ſimple and cheap conſtruction, the following deſcription, and figure referred to, are extracted from the Tranſactions of the Society of Arts, for 1787.

The engine is fixed on a wooden frame, which is ſupported with four legs, and on this frame is a box for containing the ſtraw, four feet ſix inches long; and about ten inches broad; at one end is fixed acroſs the box two rollers inlaid with iron, in a diagonal line about an eighth of an inch above the ſurface; on the ends of theſe rollers are fixed two ſtrong braſs wheels, which takes one into the other. On one of theſe wheels is a contract wheel, whoſe teeth take in a worm on a large arbor; on the end of this arbor is fixed a wooden wheel, two feet five inches diameter and three inches thick; on the inſide part of this wheel is fixed a knife, and every revolution of the wheel the knife paſſes before the end of the box and cuts the chaff, which is brought forward between the rollers, which are about two inches and a half aſunder; the ſtraw is brought on by the worm taking one tooth of the wheel every round of the knife; the ſtraw being ſo hard preſſed between the rollers, the knife cuts off the chaff with ſo great eaſe, that 22 buſhels can be cut within the hour, and makes no more noiſe than is cauſed by the knife paſſing through the chaff.

Plate CXXXVII

A is the box into which the ſtraw is put. *B*, the upper roller, with its diagonal projecting ribs of iron, the whole moving by the revolution of the braſs wheel *C* on the axis of which it is fixed. *D*, a braſs wheel, having upon it a face wheel, whoſe teeth take into the endleſs ſcrew on the arbor *E*, while the teeth on the edge of this wheel enter between thoſe on the edge of the wheel *C*. On the axis of the wheel *D* is a roller, with iron ribs ſimilar to *B*, but hid within the box. *E*, the arbor, one of the ends of which being made ſquare and paſſing through a mortiſe in the centre of the wooden wheel *F*, is faſtened by a ſtrong ſcrew and nut; the other end of this arbor moves round in a hole within the wooden block *G*. *H*, the knife, made faſt by ſcrews to the wooden wheel *F*, and kept at the diſtance of nearly three quarters of an inch from it by means of a ſtrip of wood of that thickneſs, of the form of the blade, and reaching to within an inch of the edge. *I*, the handle mortiſed into the outſide of the wooden wheel *F*.

CHAFFER, in *Zoology*, a ſpecies of beetle. See SCARABÆUS, ENTOMOLOGY *Index*.

CHAFFERCONNERS, in commerce, printed linens manufactured in the Great Mogul's dominions. They are imported by the way of Surat, and are of the number of thoſe linens prohibited in France.

CHAFFERY, in the iron works, the name of one of the two principal forges. The other is called the *finery*. When the iron has been brought at the finery into what is called an ancony, or ſquare maſs, hammered into a bar in its middle, but with its two ends rough, the buſineſs to be done at the chaffery is the reducing the whole to the ſame ſhape, by hammering down theſe rough ends to the ſhape of the middle part.

Chaffinch || Chain.

CHAFFINCH, the Engliſh name of a ſpecies of FRINGILLA. See ORNITHOLOGY *Index*.

CHAGRE, a fort of America, in the province of Darien, at the mouth of a river of the ſame name. It has been taken ſeveral times by the Bucaniers, and laſt of all by Admiral Vernon in 1740. W. Long. 82. 7. N. Lat. 9. 50.

CHAIN (*Catena*), a ſeries of ſeveral rings, or links, fitted into one another.

There are chains of divers matters, ſizes, forms, and for divers uſes.—Ports, rivers, ſtreets, &c. are cloſed with iron chains: rebellious cities are puniſhed by taking away their chains and barriers.

The arms of the kingdom of Navarre are, *Chains Or, in a field of Gules*. The occaſion hereof is referred to the kings of Spain leagued againſt the Moors; who having gained a celebrated victory againſt them in 1212, in the diſtribution of the ſpoils the magnificent tent of Miralmumin fell to the king of Navarre, as being the firſt that broke and forced the chains thereof.

A gold CHAIN is one of the ornaments or badges of the dignity of the chief magiſtrates of a city, as the mayor of London, the provoſt and bailies of Edinburgh, &c.—Something like this obtained among the ancient Gauls: the principal ornament of their perſons in power and authority was a gold chain, which they wore on all occaſions; and even in battle, to diſtinguiſh them from the common ſoldiers.

CHAIN alſo denotes a kind of ſtring, of twiſted wire; ſerving to hang watches, tweezer caſes, and other valuable toys upon. The invention of this piece of curious work is owing to the Engliſh; whence, in foreign countries, it is denominated the *Engliſh chain*. Theſe chains are uſually either of ſilver or gold, ſome of gilt copper; the thread or wire of each kind to be very fine.—For the fabric, or making of theſe chains; a part of the wire is folded into little links of an oval form; the longeſt diameter about three lines; the ſhorteſt one. Theſe, after they have been exactly ſodered, are again folded into two; and then bound together or interwoven, by means of ſeveral other little threads of the ſame thickneſs; ſome whereof, which paſs from one end to the other, imitate the warp of a ſtuff; and the others, which paſs tranſverſe, the woof. There are at leaſt four thouſand little links in a chain of four pendants; which are by this means bound ſo equally, and withal ſo firmly together, that the eye is deceived, and takes the whole to conſiſt of one entire piece.

CHAIN is alſo a kind of meaſure in France, in the trade of wood for fuel. There are chains for wood by tale, for wood by the rope, for faggots, for cleft wood, and for round ſticks. There are alſo chains for meaſuring the ſheaves of all ſorts of corn, particularly with regard to the payment of tithes; for meaſuring pottles of hay, and for meaſuring horſes. All theſe are divided into feet, inches, hands, &c. according to the uſe they are deſigned for.

CHAIN,

Chains. CHAIN, in ſurveying, is a meaſure, conſiſting of a certain number of links of iron wire, uſually a hundred; ſerving to take the dimenſions of fields, &c. This is what Merſenne takes to be the arvipendium of the ancients.

The chain is of various dimenſions, as the length or number of links varies: that commonly uſed in meaſuring land, called Gunter's chain, is in length four poles or perches; or ſixty-ſix feet, or a hundred links; each link being ſeven inches $\frac{92}{100}$. Whence it is eaſy to reduce any number of thoſe links to feet, or any number of feet to links.

This chain is entirely adapted to Engliſh meaſures; and its chief convenience is in finding readily the numbers contained in a given field. Where the proportions of ſquare feet and acres differ, the chain, to have the ſame advantages as Gunter's chain, muſt alſo be varied. Thus, in Scotland, the chain ought to be of 74 feet, or 24 Scotch ells, if no regard be had to the difference between the Scotch and Engliſh foot; but if regard be had to this difference, the Scotch chain ought to conſiſt of $74\frac{2}{5}$ Engliſh feet, or 74 feet four inches and $\frac{4}{5}$ of an inch. This chain being divided into an hundred links, each of theſe will be $8\frac{928}{1000}$ inches.

That ordinarily uſed for large diſtances, is in length 100 feet; each link one foot. For ſmall parcels, as gardens, &c. is ſometimes uſed a ſmall chain of one pole, or 16 feet and a half length; each link one inch $\frac{98}{100}$.

Some in lieu of chains uſe ropes; but theſe are liable to ſeveral irregularities, both from the different degrees of moiſture, and of the force which ſtretches them. Schwenterus, in his Practical Geometry, tells us, he has obſerved a rope ſixteen feet long reduced to fifteen in an hour's time, by the mere falling of a hoar froſt. To obviate theſe inconveniences, Wolfius directs, that the little ſtrands whereof the rope conſiſts be twiſted contrariwiſe, and the rope dipped in boiling hot oil, and when dry, drawn through melted wax. A rope thus prepared will not get or loſe any thing in length, even though kept under water all day.

CHAIN Pump. See PUMP.

CHAIN Shot, two bullets with a chain between them. They are uſed at ſea to ſhoot down yards or maſts, and to cut the ſhrouds or rigging of a ſhip.

Top CHAIN, on board a ſhip, a chain to ſling the ſail yards in time of battle, in order to prevent them from falling down when the ropes by which they are hung happen to be ſhot away or rendered incapable of ſervice.

Plate CXXXVII. *CHAIN Wales*, or *Channels*, of a ſhip, (*porteboiſſoirs*), are broad and thick planks projecting horizontally from the ſhip's outſide, abreaſt of and ſomewhat behind the maſts. They are formed to extend the ſhrouds from each other, and from the axis or middle line of the ſhip, ſo as to give a greater ſecurity and ſupport to the maſts, as well as to prevent the ſhrouds from damaging the gunwale, or being hurt by rubbing againſt it. Every maſt has its chain wales, which are either built above or below the ſecond deck ports in a ſhip of the line; they are ſtrongly connected to the ſide by knees, bolts, and ſtandards, beſides being confined thereto by the chains, whoſe upper ends paſs through notches on the outer edge of the chain wales, ſo as to unite with the ſhrouds above. Chains || Chair.

CHAINS, in *Ship-Building*, are ſtrong links or plates of iron, the lower ends of which are bolted through the ſhip's ſide to the timbers.

Hanging in CHAINS, a kind of puniſhment inflicted on murderers. By ſtat. 25. Geo. II. c. 37. the judge ſhall direct ſuch to be executed on the next day but one, unleſs Sunday intervene; and their bodies to be delivered to the ſurgeons to be diſſected and anatomized: and he may direct them afterwards to be hung in chains. During the interval between ſentence and execution, the priſoner ſhall be kept alone, and ſuſtained only with bread and water. The judge, however, hath power to reſpite the execution, and relax the other reſtraints of the act.

CHAIN Iſland, an iſland lately diſcovered by Captain Wallis in the South ſea. It ſeemed to be about five miles long and as much broad, lying in the direction of north-weſt and ſouth-eaſt. It appeared to be a double range of woody iſlands joined together by reefs, ſo as to compoſe one iſland of an oval figure, with a lake in the middle. The trees are large, and from the ſmoke that iſſued from the woods, it appeared to be inhabited. W. Long. 145. 54. S. Lat. 17. 23.

CHAJOTLI, or CHAYOTI, a Mexican fruit of a round ſhape, and ſimilar in the huſk with which it is covered to the cheſnut, but four or five times larger, and of a much deeper green colour. Its kernel is of a greeniſh white, and has a large ſtone in the middle, which is white, and like it in ſubſtance. It is boiled, and the ſtone eaten with it. This fruit is produced by a twining perennial plant, the root of which is alſo good to eat.

CHAIR, (*Cathedra*), was anciently uſed for the pulpit, or ſuggeſtum, whence the prieſt ſpoke to the people.

It is ſtill applied to the place where profeſſors and regents in univerſities deliver their lectures, and teach the ſciences to their pupils; thus, we ſay, the profeſſor's chair, the doctor's chair, &c.

Curule CHAIR, was an ivory ſeat placed on a car, wherein were ſeated the prime magiſtrates of Rome, and thoſe to whom the honour of a triumph had been granted.

Sedan CHAIR, a vehicle ſupported by poles, wherein perſons are carried; borne by two men. There are 200 chairs allowed by act of parliament: and no perſon is obliged to pay for a hackney chair more than the rate allowed by the act for a hackney coach driven two-third parts of the ſaid diſtance. 9. Ann. c. 23. § 8. Their number is ſince increaſed by 10 Ann. c. 19. and 12 Geo. I. c. 12. to 400. See *Hackney COACHES*.

CHAIR is alſo applied by the Romaniſts to certain feaſts, held anciently in commemoration of the tranſlation of the ſee, or ſeat of the vicarage of Chriſt, by St Peter.

The perforated chair, wherein the new elected pope is placed, F. Mabillon obſerves, is to be ſeen at Rome: but the origin thereof he does not attribute, as is commonly done, to the adventure of Pope Joan; but ſays there is a myſtery in it; and it is intended,

Chairman || Chalcedony.

tended, forſooth, to explain to the pope thoſe words of Scripture, that *God draws the poor from out of the duſt and mire.*

CHAIRMAN, the preſident, or ſpeaker of an aſſembly, company, &c. We ſay, the chairman of a committee, &c.

CHAISE, a ſort of light open chariot, or calaſh.

Aurelius Victor relates, that Trajan firſt introduced the uſe of poſt chaiſes; but the invention is generally aſcribed to Auguſtus; and was probably only improved by Trajan and ſucceeding emperors.

CHALAZA, among naturaliſts, a white knotty ſort of a ſtring at each end of an egg, formed of a plexus of the fibres of the membranes, whereby the yolk and white are connected together. See EGG.

CHALCAS. See BOTANY *Index.*

CHALCEDON, or CALCEDON, anciently known by the names of *Proceraſtis* and *Colbuſa;* a city of Bithynia, ſituated at the mouth of the Euxine, on the north extremity of the Thracian Boſphorus, over againſt Byzantium. Pliny, Strabo, and Tacitus, call it, *The City of the Blind;* alluding to the anſwer which the Pythian Apollo gave to the founders of Byzantium, who, conſulting the oracle relative to a place where to build a city, were directed to chooſe that ſpot, which lay oppoſite "to the habitation of the blind;" that is, as was then underſtood, to Chalcedon: the Chalcedonians well deſerving that epithet for having built their city in a barren and ſandy ſoil, without ſeeing that advantageous and pleaſant ſpot on the oppoſite ſhore, which the Byzantines afterwards choſe.—Chalcedon, in the Chriſtian times became famous on account of the council which was held there againſt Eutyches. The emperor Valens cauſed the walls of this city to be levelled with the ground for ſiding with Procopius, and the materials to be conveyed to Conſtantinople, where they were employed in building the famous Valentinian aqueduct. Chalcedon is at preſent a poor place, known to the Greeks by its ancient name, and to the Turks by that of *Cadiaci*, or, "the judges town."

CHALCEDONY, in *Natural Hiſtory*, a genus of the ſemipellucid gems. They are of an even and regular not tabulated ſtructure; of a ſemi-opaque cryſtalline baſis, and variegated with different colours; but thoſe ever diſpoſed in form of miſts or clouds, and, if nicely examined, found to be owing to an admixture of various coloured earths, but imperfectly blended in the maſs, and often viſible in diſtinct moleculæ.—It has been doubted by ſome whether the ancients were at all acquainted with the ſtone we call *Chalcedony;* they having deſcribed a Chalcedonian carbuncle and emerald, neither of which can at all agree with the characters of our ſtone; but we are to conſider that they have alſo deſcribed a Chalcedonian jaſper which ſeems to have been the very ſame ſtone as they deſcribe by the word *turbida*, which extremely well agrees with our chalcedony.

There are four known ſpecies of the chalcedony. 1. A bluiſh white one. This is the moſt common of all, and is found in the ſhape of our flints and pebbles, in maſſes of two or three inches or more in diameter. It is of a whitiſh colour, with a faint cloud of blue diffuſed all over it, but always in the greateſt degree near the ſurface. This is a little leſs hard than the oriental onyx. The oriental chalcedonies are the only ones of any value; they are found in vaſt abundance on the ſhores of rivers in all parts of the Eaſt Indies, and frequently come over among the ballaſt of the Eaſt India ſhips. They are common in Sileſia and Bohemia, and other parts of Europe alſo; but with us are leſs hard, more opaque, and of very little value. 2. The dull milky-veined chalcedony. This is a ſtone of little value; and is ſometimes met with among our lapidaries, who miſtake it for a kind of nephritic ſtone. It is of a ſomewhat yellowiſh white or cream colour, with a few milk-white veins. This is principally found in New Spain. 3. The third is a browniſh, black, dull, and cloudy one, known to the ancients by the name of ſmoky jaſper, or jaſpis capnitis. This is the leaſt beautiful ſtone of all the claſs: it is of a pale browniſh white, clouded all over with a blackiſh miſt, as the common chalcedony is with a blue. It is common both in the Eaſt and Weſt Indies, and in Germany; but is very little valued, and is ſeldom worked into any thing better than the handles of knives. 4. The yellow and red chalcedony is greatly ſuperior to all the reſt in beauty; and is in great repute in Italy, though very little known among us. It is naturally compoſed of an admixture of red and yellow only, on a clouded cryſtalline baſis; but is ſometimes found blended with the matter of common chalcedony, and then is mixed with blue. It is all over of the miſty hue of the common chalcedony. This is found only in the Eaſt Indies, and there not plentifully. The Italians make it into beads, and call theſe *caſſidonies;* but they are not determinate in the uſe of the word, but call beads of ſeveral of the agates by the ſame name.—All the chalcedonies readily give fire with ſteel, and make no effervescence with aqua-fortis.

Chalcedony. Chalcidene.

CHALCIDENE, or CHALCIDICE, in *Ancient Geography*, an inland country of Syria, having Antiochia or Seleucia to the weſt, Cyrrheſtica to the north, to the ſouth Apamene and Cœloſyria, and to the eaſt Chalybonites; being ſo called from its principal city Chalcis. This province, one of the moſt fruitful in Syria, was ſeized by Ptolemy the ſon of Mennæus during the troubles of Syria, and by him made a ſeparate kingdom. Ptolemy himſelf is ſtyled by Joſephus and Hegeſippus only prince of Chalcis, but his ſon Lyſanias is honoured both by Joſephus and Dio with the title of king. Upon the death of Antiochus Dionyſius king of Syria, Ptolemy attempted to make himſelf maſter of Damaſcus and all Cœloſyria; but the inhabitants having an utter averſion to him on account of his cruelty and wickedneſs, choſe rather to ſubmit to Aretas king of Arabia, by whom Antiochus and his whole army had been cut off. He oppoſed Pompey on his entering Syria; but was by him defeated, taken priſoner, and ſentenced to death; which, however, he eſcaped by paying a thouſand talents, and was left alſo in poſſeſſion of his kingdom. After Ariſtobulus king of Judea had been poiſoned by the friends of Pompey, and Alexander his ſon beheaded at Antioch, he ſent Philippion his ſon to Aſcalon, whither the widow of Ariſtobulus had retired with her other children, to bring them all to Chalcis; propoſing, as he was in love with one of the daughters named Alexandra, to maintain them in his own kingdom in a manner ſuitable to their rank: but Philippion like-

Chalcidic || Chalcondylas.

wife being in love with Alexandra, married her on the way; for which preſumption Ptolemy put him to death on his return, and then took her to wife. On account of this affinity, he ſupported to the utmoſt of his power Antigonus the younger ſon of Ariſtobulus, who took the field at the head of a conſiderable army, but on his entering Judæa was entirely defeated by Herod. Ptolemy ſoon after died, and was ſucceeded by his ſon Lyſanias, who eſpouſing the cauſe of the Aſmonæan family with great warmth, promiſed to Barzapharnes who commanded the Parthian troops in Syria, and to Pacorus the king's ſon, a thouſand talents and five hundred women, provided they ſhould put Antigonus in poſſeſſion of the kingdom of Judæa, and depoſe Hyrcanus. He was not long after put to death by Mark Antony, at the inſtigation of Cleopatra; who, in order to have his dominions, accuſed him falſely of having entered into an alliance with the Parthians.

CHALCIDIC, CHALCIDICUM, or CHALCEDONIUM, in the ancient architecture, a large magnificent hall belonging to a tribunal or court of juſtice. Feſtus ſays, it took its name from the city Chalcis; but he does not give the reaſon. Philander will have it to be the court or tribunal where affairs of money and coinage were regulated; ſo called from χαλκος, *braſs*, and δικη, *juſtice*. Others ſay, the money was ſtruck in it; and derive the word from χαλκος, and οικος, *houſe*. In Vitruvius, it is uſed for the auditory of a baſilica; in others of the ancient writers for a hall or apartment where the heathens imagined their gods to eat.

CHALCIDICE, in *Ancient Geography*, an eaſtern diſtrict of Macedonia, ſtretching northwards between the Sinus Toronæus and Singiticus. Formerly a part of Thrace, but invaded by Philip of Macedon. Named from the city Chalcis near Olynthus.

CHALCIDIUS, a famous Platonic philoſopher in the third century, who wrote a commentary, which is eſteemed, on the Timæus of Plato. This work has been tranſlated from the Greek into Latin.

CHALCIS, in *Ancient Geography*, a city of Chalcidice. See CHALCIDICE. Another of Ætolia, near the mouth of the river Evenus, on the Ionian ſea, at the foot of a cognominal mountain; and therefore called by ſome *Hypochalcis*.—Another of Eubœa (Strabo), on the Euripus, the country of Lycophron the poet, one of the ſeven which formed the conſtellation Pleiades. Now *Negroponte*. E. Long. 24. 30. Lat. 38. 30.—A fourth, the capital of Chalcidene in Syria; diſtinguiſhed by the ſurname *ad Belum*, a mountain or a river; and *ad Libanum*, from its ſituation (Pliny.)

CHALCITIS, one of the diviſions or diſtricts of Meſopotamia, to the ſouth of Anthemuſia, the moſt northern diſtrict, next to Armenia, and ſituated between Edeſſa and Carræ. *Chalcitis* (Pliny), an iſland oppoſite to Chalcedon.

CHALCONDYLAS, DEMETRIUS, a learned Greek, born at Conſtantinople, left that city after its being taken by the Turks, and afterwards taught Greek in ſeveral cities in Italy. He compoſed a Greek grammar; and died at Milan in 1513.

CHALCONDYLAS, *Laonicus*, a famous Greek hiſtorian of the 15th century, was born at Athens; and wrote an excellent hiſtory of the Turks, from Ottoman, who reigned about the year 1300, to Mahomet II. in 1453.

Chaldea || Chalk.

CHALDEA, in *Ancient Geography*, taken in a larger ſenſe, included Babylonia; as in the prophecies of Jeremiah and Ezekiel. In a reſtricted ſenſe, it denoted a province of Babylonia, towards Arabia Deſerta; called in Scripture, *The land of the Chaldeans*. Named from Chaled the fourth ſon of Nahor. See BABYLONIA.

CHALDEE LANGUAGE, that ſpoken by the Chaldeans or people of Chaldea. It is a dialect of the HEBREW.

CHALDEE Paraphraſe, in the rabbinical ſtile, is called TARGUM. There are three Chaldee paraphraſes in Walton's Polyglot; viz. that of Onkelos, that of Jonathan ſon of Uzziel, and that of Jeruſalem.

CHALDRON, a dry Engliſh meaſure, conſiſting of thirty-ſix buſhels, heaped up according to the ſealed buſhel kept at Guildhall, London: but on ſhipboard, twenty-one chaldrons of coals are allowed to the ſcore. The chaldron ſhould weigh two thouſand pounds.

CHALICE, the cup or veſſel uſed to adminiſter the wine in the ſacrament, and by the Roman Catholics in the maſs.

The uſe of the chalice, or communicating in both kinds, is by the church of Rome denied to the laity, who communicate only in one kind, the clergy alone being allowed the privilege of communicating in both kinds.

CHALK, (*Creta*), is a white earth found plentifully in Britain, France, Norway, and other parts of Europe, ſaid to have been anciently dug chiefly in the iſland of Crete, and thence to have received its name of *Creta*. They have a very eaſy way of digging chalk in the county of Kent in England. It is there found on the ſides of hills; and the workmen undermine it ſo far as appears proper; then digging a trench at the top, as far diſtant from the edge as the undermining goes at bottom, they fill this with water, which ſoaks through in the ſpace of a night, upon which the whole flake falls down at once. In other parts of the kingdom, chalk generally lies deeper, and they are forced to dig for it at conſiderable depths, and draw it up in buckets.

Chalk is of two kinds; hard, dry, and firm, or ſoft and unctuous; both of which are adapted to various purpoſes. The hard and dry kind is much the propereſt for burning into lime; but the ſoft and unctuous chalk is the beſt for uſing as a manure for lands. Chalk, whether burnt into lime or not, is in ſome caſes an excellent manure.

Pure chalk melts eaſily with alkali and flint into a tranſparent colourleſs glaſs. With alkaline ſalts it melts ſomewhat more difficultly, and with borax ſomewhat more eaſily, than with flint or ſand. It requires about half its weight of borax and its whole weight of alkali to fuſe it. Sal mirabile, and ſandiver, which do not vitrify at all with the cryſtalline earths, form, with half their weight of chalk, the firſt a yellowiſh black, the latter a greeniſh, glaſs. Nitre, on the other hand, one of the moſt active fluxes for flint, does not perfectly vitrify with chalk. This earth notably promotes the vitrification of flint; a mixture of the two requiring leſs alkali than either of them ſeparately. If glaſs made from flint and alkali is further ſaturated with the flint, ſo as to be incapable of bearing

Chalk. bearing any further addition of that earth without becoming opaque and milky, it will ſtill in a ſtrong fire take up a conſiderable proportion, one-third or one-fourth of its weight, of chalk, without injury to its tranſparency: hence chalk is ſometimes made uſe of in compoſitions for glaſs, as a part of the ſalt may then be ſpared. Chalk likewiſe has a great effect in melting the ſtony matters intermixed with metallic ores, and hence might be of uſe in ſmelting ores; as indeed limeſtone is uſed for that purpoſe. But it is remarkable, that chalk, when deprived of its fixed air, and converted into limeſtone, loſes much of its diſpoſition to vitrify. It is then found to melt very difficultly and imperfectly, and to render the glaſs opaque and milky.

Chalk readily imbibes water; and hence maſſes of it are employed for drying precipitates, lakes, earthy powders that have been levigated with water, and other moiſt preparations. Its economical uſes in cleaning and poliſhing metalline or glaſs utenſils are well known. In this caſe it is powdered and waſhed from any gritty matter it may contain, and is then called *whiting*.—In medicine it is one of the moſt uſeful abſorbents, and is to be looked upon ſimply as ſuch. The aſtringent virtues which ſome have attributed to it have no foundation, unleſs in as far as the earth is ſaturated with an acid, with which it compoſes a ſaline concrete manifeſtly ſubaſtringent. For the further properties of chalk, ſee CHEMISTRY *Index*.

Black CHALK, a name given by painters to a ſpecies of earth with which they draw on blue paper, &c. It is found in pieces from two to ten feet long, and from four inches to twenty in breadth, generally flat, but ſomewhat riſing in the middle, and thinner towards the edges, commonly lying in large quantities together. While in the earth, it is moiſt and flaky: but being dried, it becomes conſiderably hard and very light: but always breaks in ſome particular direction; and if attentively examined when firſt broken, appears of a ſtriated texture. To the touch it is ſoft and ſmooth, ſtains very freely, and by virtue of its ſmoothneſs makes very neat marks. It is eaſily reduced into an impalpable ſoft powder without any diminution of its blackneſs. In this ſtate it mixes eaſily with oil into a ſmooth paſte; and being diffuſed through water it ſlowly ſettles in a black ſlimy or muddy form; properties which make its uſe very convenient to the painters, both in oil and water colours. It appears to be an earth quite different from common chalk, and rather of the ſlaty bituminous kind. In the fire it becomes white with a reddiſh caſt, and very friable, retaining its flaky ſtructure, and looking much like the white flaky maſſes which ſome ſorts of pit-coal leave in burning. Neither the chalk nor theſe aſhes are at all affected by acids.

The colour ſhops are ſupplied with this earth from Italy or Germany; though ſome parts of England afford ſubſtances nearly, if not entirely, of the ſame quality, and which are found to be equally ſerviceable both for marking and as black paints. Such particularly is the black earth called *killow*, ſaid by Dr Merret in his *Pinax Rerum Britannicarum* to be found in Lancaſhire, and by Mr Da Coſta, in his Hiſtory of Foſſils, to be plentiful near the top of Cay-Avon, a high hill in Merionethſhire.

Red CHALK, an earth much uſed by painters and artificers, and common in the colour ſhops. It is properly an indurated clayey ochre, and is dug in Germany, Italy, Spain, and France, but in greateſt quantity in Flanders. It is of a fine, even, and firm texture; very heavy, and very hard; of a pale red on the outſide, but of a deep duſky chocolate colour within. It adheres firmly to the tongue, is perfectly inſipid to the taſte, and makes no effervescence with acids. Chalk, Challenge.

Chalk Land. Barley and wheat will ſucceed very well on the better ſort of chalky land, and oats generally do well on any kind of it. The natural produce of this ſort of land in weeds, is that ſort of ſmall vetch called the *tine-tare*, with poppies, may-weed, &c. Sainfoin and hope clover will generally ſucceed tolerably well on theſe lands; and where they are of a better ſort, the great clover will do. The beſt manure is dung, old rags, and the ſheep dung left after folding them.

Chalk-Stones, in *Medicine*, ſignify the concretions of calcareous matter in the hands and feet of people violently afflicted with the gout. Leeuwenhoek has been at the pains of examining theſe by the microſcope. He divides them into three parts. The firſt is compoſed of various ſmall parcels of matter looking like white grains of ſand; this is harder and drier, and alſo whiter, than the reſt. When examined with large magnifiers, thoſe are found to be compoſed of oblong particles laid cloſely and evenly together: though the whole ſmall ſtones are opaque, theſe components parts of them are pellucid, and reſemble pieces of horſe hair cut ſhort, only that they are ſomewhat pointed at both ends. Theſe are ſo extremely thin, that Mr Leeuwenhoek computes, that 1000 of them placed together would not amount to the ſize of one hair of our heads. The whole ſtones in this harder part of the chalk are not compoſed of theſe particles, but there are confuſedly thrown in among them ſome broken parts of other ſubſtances, and in a few places ſome globules of blood and ſmall remains of other juices. The ſecond kind of chalky matter is leſs hard and leſs white than the former, and is compoſed of fragments or irregular parts of thoſe oblong bodies which compoſe the firſt or hardeſt kind, and theſe are mixed among tough and clear matter, and interſperſed with the ſmall broken globules of blood diſcoverable in the former, but in much greater quantity. The the third kind appears red to the naked eye; and, when examined with glaſſes, is found to be a more tough and clammy white matter, in which a great number of globules of blood are interſperſed; theſe give it the red appearance it has.

CHALLENGE, a cartel or invitation to a duel or other combat *. A challenge either by word or letter, or to be the bearer of ſuch a challenge, is puniſhable by fine and impriſonment on indictment or information. * See *Duel*.

CHALLENGE, among hunters. When hounds or beagles, at firſt finding the ſcent of their game, preſently open and cry, they are ſaid to challenge.

CHALLENGE, in the *Law of England*, is an exception made to jurors †; and is either in civil or criminal caſes. † See the article *Trial*.

I. In *civil* caſes challenges are of two ſorts; challenges to the *array*, and challenges of the *poll*.

Challenge.

1. Challenges to the array are at once an exception to the whole panel, in which the jury are arrayed, or ſet in order by the ſheriff in his return; and they may be made upon account of partiality or ſome default in the ſheriff or his under officer who arrayed the panel. Alſo, though there be no perſonal objection againſt the ſheriff, if yet he arrays the panel at the nomination, or under the direction of either party, this is good cauſe of challenge to the array. Formerly, if a lord of parliament had a cauſe to be tried, and no knight was returned upon the jury, it was a cauſe of challenge to the array: alſo by the policy of the ancient law, the jury was to come *de vicineto*, from the neighbourhood of the vill or place where the cauſe of action was laid in the declaration: and therefore ſome of the jury were obliged to be returned from the hundred in which ſuch vill lay; and, if none were returned, the array might be challenged from defect of hundreders. For, living in the neighbourhood, theſe were ſuppoſed to know beforehand the characters of the parties and witneſſes; and therefore they better knew what credit to give to the facts alledged in evidence. But this convenience was overbalanced by another very natural and almoſt unavoidable inconvenience; that jurors, coming out of the immediate neighbourhood; would be apt to intermix their prejudices and partialities in the trial of right. And this the law was ſo ſenſible of, that it for a long time has been gradually relinquiſhing this practice; the number of neceſſary hundreders in the whole panel, which in the reign of Edward III. was conſtantly ſix, being in the time of Forteſcue reduced to four; afterwards by ſtatute 26 Eliz. c. 6. to two; and at length, by ſtatute 4 and 5 Anne, c. 16. it was entirely aboliſhed upon all civil actions, except upon penal ſtatutes; and upon thoſe alſo by the 24 Geo. II. c. 18. the jury being now only to come *de corpore comitatus*, from the body of the country at large, and not *de vicineto*, or from the particular neighbourhood. The array by the ancient law may alſo be challenged, if an alien be party to the ſuit, and upon a rule obtained by his motion to the court for a jury *de medietate linguæ*, ſuch a one be not returned by the ſheriff purſuant to the ſtatute 28 Edward III. c. 13. enforced by 8 Hen. VI. c. 29. which enacts, that where either party is an alien born, the jury ſhall be one half denizens and the other aliens (if ſo many be forthcoming in the place), for the more impartial trial; a privilege indulged to ſtrangers in no other country in the world; but which is as ancient in England as the time of King Ethelred, in whoſe ſtatute *de monticolis Walliæ* (then alliens to the crown of England), c. 3. it is ordained, that "duodeni legales homines, quorum ſex Walli et ſex Angli erunt, Anglis et Wallis jus dicunto."

2. Challenges to the polls, *in capita*, are exceptions to particular jurors; and ſeem to anſwer the *recuſatio judicis* in the civil and canon laws; by the conſtitutions of which a judge might be refuſed upon any ſuſpicion of partiality. By the laws of England alſo, in the times of Bracton and Fleta, a judge might be refuſed for good cauſe; but now the law is otherwiſe, and it is held that judges or juſtices cannot be challenged. For the law will not ſuppoſe a poſſibility of bias or favour in a judge who is already ſworn to adminiſter impartial juſtice, and whoſe authority greatly depends on that preſumption and idea. And, ſhould the fact at any time prove flagrantly ſuch, as the delicacy of the law will not preſume beforehand, there is no doubt but that ſuch miſbehaviour would draw down a heavy cenſure from thoſe to whom the judge is accountable for his conduct. But challenges to the polls of the jury (who are judges of fact) are reduced to four heads by Sir Edward Coke: *propter honoris reſpectum; propter defectum; propter affectum;* and *propter delictum.* 1. *Propter honoris reſpectum;* as, if a lord of parliament be impannelled on a jury, he may be challenged by either party, or he may challenge himſelf. 2. *Propter defectum;* as, if a juryman be an alien born, this is defect of birth; if he be a ſlave or bondman, it is defect of liberty, and he cannot be a *liber et legalis homo.* Under the word *homo* alſo, though a name common to both ſexes, the female is however excluded, *propter defectum ſexus:* except when a widow feigns herſelf with child in order to exclude the next heir, and a ſuppoſititious birth is ſuſpected to be intended; then upon the writ *de ventre inſpiciendo*, a jury of women is to be impannelled to try the queſtion whether with child or not. But the principal deficiency is defect of eſtate ſufficient to qualify him to be a juror, which depends upon a variety of ſtatutes *. 3. Jurors may be challenged *propter affectum*, for ſuſpicion of bias or partiality. This may be either a principal challenge, or to the favour. A *principal* challenge is ſuch, where the cauſe aſſigned carries with it, *prima facie*, evident marks of ſuſpicion either of malice or favour; as, that a juror is of kin to either party within the ninth degree; that he has an intereſt in the cauſe; that there is an action depending between him and the party; that he has taken money for his verdict, &c. which if true, cannot be overruled; for jurors muſt be *omni exceptione majores.* Challenges *to the favour* are where the party hath no principal challenge; but objects only ſome probable circumſtances of ſuſpicion, as acquaintance, and the like; the validity of which muſt be left to the determination of *triors*, whoſe office is to decide whether the juror be favourable or unfavourable. 4. Challenges *propter delictum*, are for ſome crime or miſdemeanour that affects the juror's credit, and renders him infamous: As for a conviction of treaſon, felony, perjury, or conſpiracy; or if for ſome infamous offence, he hath received judgment of the pillory or the like.

* See *Blackſtone's Comm.* III. 362.

II. In *criminal* caſes, challenges may be made either on the part of the king, or on that of the priſoner; and either to the whole array, or to the ſeparate polls, for the very ſame reaſons that they may be in civil cauſes. For it is here at leaſt as neceſſary as there, that the ſheriff or returning officer be totally indifferent; that, where an alien is indicted, the jury ſhould be *de medietate*, or half foreigners, if ſo many are found in the place (which does not indeed hold in treaſons; aliens being very improper judges of the breach of allegiance; nor yet in the caſe of Egyptians under the ſtatute 22 Hen. VIII. c. 10.); that on every pannel there ſhould be a competent number of hundreders; and that the particular jurors ſhould be *omni exceptione majores*, not liable to objections either *propter honoris reſpectum*, *propter defectum*, *propter affectum*, or *propter delictum.*

Challenges

Challenge || Chaloner.

Challenges on any of the foregoing accounts are ſtyled challenges *for cauſe*; which may be without ſtint in both civil and criminal trials. But in criminal caſes, or at leaſt in capital ones, there is, *in favorem vitæ*, allowed to the priſoner an arbitrary and capricious ſpecies of challenge to a certain number of jurors, without ſhowing any cauſe at all; which is called a peremptory challenge: a proviſion full of tenderneſs and humanity to priſoners for which our laws are juſtly famous. This is grounded on two reaſons: 1. As every one muſt be ſenſible what ſudden impreſſions and unaccountable prejudices we are apt to conceive upon the bare looks and geſtures of another; and how neceſſary it is that a priſoner, when put to defend his life, ſhould have a good opinion of his jury, the want of which might totally diſconcert him; the law wills not that he ſhould be tried by any one man againſt whom he has conceived a prejudice even without being able to aſſign a reaſon for ſuch his diſlike. 2. Becauſe upon challenges for cauſe ſhown, if the reaſon aſſigned prove inſufficient to ſet aſide the juror, perhaps the bare queſtioning his indifference may ſometimes provoke a reſentment; to prevent all ill conſequences from which, the priſoner is ſtill at liberty, if he pleaſes, peremptorily to ſet him aſide.

This privilege of peremptory challenges, though granted to the priſoner, is denied to the king by the ſtatute 33 Edward I. ſtat. 4. which enacts, that the king ſhall challenge no jurors without aſſigning a cauſe certain to be tried and approved by the court. However, it is held that the king need not aſſign his cauſe of challenge till all the panel is gone through, and unleſs there cannot be a full jury without the perſons ſo challenged. And then, and not ſooner, the king's counſel muſt ſhow the cauſe, otherwiſe the juror ſhall be ſworn.

The peremptory challenges of the priſoner muſt, however, have ſome reaſonable boundary, otherwiſe he might never be tried. This reaſonable boundary is ſettled by the common law to the number of 35; that is, one under the number of three full juries. For the law judges, that 35 are fully ſufficient to allow the moſt timorous man to challenge through mere caprice; and that he who peremptorily challenges a greater number, or three full juries, has no intention to be tried at all. And therefore it deals with one who peremptorily challenges above 35, and will not retract his challenge, as with one who ſtands mute or refuſes his trial; by ſentencing him to the *pein forte et dure* in felony, and by attainting him in treaſon. And ſo the law ſtands at this day with regard to treaſon of any kind. But by ſtatute 22 Hen. VIII. c. 14. (which, with regard to felonies, ſtands unrepealed), no perſon arraigned for felony can be admitted to make more than 20 peremptory challenges.

CHALONS-SUR-SAONE, an ancient town of France, in Burgundy, and capital of the Chalonnois, with a citadel and biſhop's ſee. It is ſeated on the river Saone, in E. Long. 5. 7. N. Lat. 46. 47.

Chalons-Sur Marne, a large epiſcopal town of France, in Champagne. It carries on a conſiderable trade in ſhalloons and other woollen ſtuffs. It is ſeated between two fine meadows on the rivers Marne, Mau, and Nau, in E. Long. 4, 37. N. Lat. 48. 57.

CHALONER, Sir Thomas, a ſtateſman, ſoldier, and poet, deſcended from a good family in Denbigh in Wales, was born at London about the year 1515. Having been educated in both univerſities, but chiefly at Cambridge, he was introduced at the court of Henry VIII. who ſent him abroad in the retinue of Sir Henry Knevet, ambaſſador to Charles V. and he had the honour to attend that monarch on his fatal expedition againſt Algiers in 1541. Soon after the fleet left that place, he was ſhipwrecked on the coaſt of Barbary in a very dark night: and having exhauſted his ſtrength by ſwimming, he chanced to ſtrike his head againſt a cable, which he had the preſence of mind to catch hold of with his teeth; and, with the loſs of ſeveral of them, was drawn up by it into the ſhip to which he belonged. Mr Chaloner returned ſoon after to England, and was appointed firſt clerk of the council, which office he held during the reſt of that reign. On the acceſſion of Edward VI. he became a favourite of the duke of Somerſet, whom he attended to Scotland, and was knighted by that nobleman after the battle of Muſſelburgh, in 1547. The protector's fall put a ſtop to Sir Thomas Chaloner's expectations, and involved him in difficulties. During the reign of Queen Mary, being a determined Proteſtant, he was in ſome danger; but having many powerful friends, he had the good fortune to eſcape. On the acceſſion of Queen Elizabeth, he appeared again at court; and was ſo immediately diſtinguiſhed by her majeſty, that ſhe appointed him ambaſſador to the emperor Ferdinand I. being the firſt ambaſſador ſhe nominated. His commiſſion was of great importance; and the queen was ſo well ſatisfied with his conduct; that ſoon after his return, ſhe ſent him in the ſame capacity to Spain: but Sir Thomas was by no means ſatisfied with this inſtance of her majeſty's confidence: the courts of England and Spain being at this time extremely diſſatisfied with each other, he foreſaw that his ſituation would be very diſagreeable, and ſo it proved; but Elizabeth muſt be obeyed. He embarked for Spain in 1561, and returned to London in 1564, in conſequence of a requeſt to his ſovereign, in an elegy written in imitation of Ovid. After his return, he reſided in a houſe built by himſelf in Clerkenwell-cloſe, where he died in the year 1565, and was buried in St Paul's. Sir William Cecil aſſiſted as chief mourner at his funeral. Chaloner.

So various were the talents of Sir Thomas Chaloner, that he excelled in every thing to which he applied himſelf. He made a conſiderable figure as a poet. His poetical works were publiſhed by William Malim, maſter of St Paul's ſchool, in 1579. His capital work was that "Of reſtoring the Engliſh republic, in ten books," which he wrote when he was ambaſſador in Spain. It is remarkable, that this great man, who knew how to tranſact as well as write upon the moſt important affairs of ſtates and kingdoms, could deſcend to compoſe a *dictionary for children*, and to tranſlate from the Latin a book *Of the office of Servants*, merely for the utility of the ſubjects.

Chaloner, *Sir Thomas*, the younger, though inconſiderable as an author, deſerves to be recorded as a ſkilful naturaliſt, in an age wherein natural hiſtory was very little underſtood in this or any other country; and particularly as the founder of the alum works in Yorkſhire, which have ſince proved ſo exceedingly advantageous

Chalybeat ‖ Cham.

tageous to the commerce of this kingdom. He was the only ſon of Sir Thomas Chaloner mentioned in the laſt article, and was born in the year 1559. Being very young at the time of his father's death, the lord treaſurer Burleigh, taking charge of his education, ſent him to St Paul's ſchool, and afterwards to Magdalen college in Oxford, where, like his father, he diſcovered extraordinary talents for Latin and Engliſh poetry. About the year 1580, he made the tour of Europe, and returned to England before 1584; for in that year, we find him a frequent attendant in the court of Queen Elizabeth. About this time he married the daughter of Sir William Fleetwood, recorder of London. In 1691 he was knighted; and, ſome time after, diſcovered the alum mines on his eſtate at Giſborough, near the river Tees in Yorkſhire (A).

Towards the latter end of the queen's reign, Sir Thomas viſited Scotland; and returning to England in the retinue of King James I. found ſuch favour in the ſight of his majeſty, that he was immediately appointed governor to Prince Henry, whom he conſtantly attended, and, when his royal pupil viſited Oxford, was honoured with the degree of maſter of arts. How he was employed after the death of the prince is not known. Some years before that event, he married a ſecond wife, the daughter of Mr William Blount of London, by whom he had ſome children. He died in the year 1615, and was buried at Chiſwick in Middleſex. His eldeſt ſon William was created a baronet in the 18th of James, anno 1620. The title was extinct in 1681. He wrote, 1. Dedication to Lord Burleigh of his father's poetical works, dated 1579. 2. The virtue of nitre, wherein is declared the ſundry cures by the ſame effected. Lond. 1584, 4to.

CHALYBEAT, in *Medicine*, an appellation given to any liquid, as wine or water, impregnated with particles of iron or ſteel. See MINERAL WATERS.

CHALYBES, in *Ancient Geography*, an ancient people of the Hither Aſia. Their ſituation is differently aſſigned; Strabo placing them in Paphlagonia, to the eaſt of Synope; Apollonius Rhodius and Stephanus, on the eaſt of the Thermodon, in Pontus; called *Halizones*, by Homer. They either gave their name to, or took it from, their iron manufactures (Xenophon, Val. Flaccus), their only ſupport, their ſoil being barren and ungrateful, (Dionyſius Periegetes).

CHAM, or KHAN, the title given to the ſovereign princes of Tartary.

The word, in the Perſian, ſignifies *mighty lord*; in the Sclavonic, *emperor*. Sperlingius, in his diſſertation on the Daniſh term of *majeſty*, *koning*, *king*, thinks the Tartarian *cham* may be well derived from it; adding, that in the north they ſay *kan*, *konnen*, *konge*, *koning*, &c. The term *cham* is alſo applied, among the Perſians, to the great lords of the court, and the governors of provinces. Cham ‖ Chamanim.

CHAM, in *Geography*, a town of the Bavarian palatinate, ſituated on a river of the ſame name, about 25 miles north-eaſt of Ratiſbon. E. Long. 13. N. Lat. 49. 15.

CHAMA, in *Zoology*, a genus of ſhell fiſh belonging to the order of vermes teſtaceæ. The ſhell is thick, and has two valves; it is an animal of the oyſter kind. Linnæus enumerates 14 ſpecies, principally diſtinguiſhed by the figure of their ſhells.

CHAMADE, in *War*, a certain beat of a drum, or ſound of a trumpet, which is given the enemy as a ſignal to inform them of ſome propoſitions to be made to the commander, either to capitulate, to have leave to bury their dead, make a truce, or the like.—Menage derives the word from the Italian *chiamata*, of *clamare*, "to cry."

CHAMÆDRYS. See VERONICA, BOTANY *Index*.

CHAMÆPITYS. See TEUCRIUM, BOTANY *Index*.

CHAMÆROPS. See BOTANY *Index*.

This plant the Americans call *thatch*, from the uſe to which the leaves are applied.—Under the name of palmetto, however, Mr Adanſon deſcribes a ſpecies of palm which grows naturally at Senegal, whoſe trunk riſes from 50 to 60 feet in height: from the upper end of the trunk iſſues a bundle of leaves, which, in turning off, form a round head; each leaf repreſents a fan of five or ſix feet in expanſion, ſupported by a tail of the ſame length. Of theſe trees ſome produce male flowers, which are conſequently barren; others are female, and loaded with fruit, which ſucceed each other uninterruptedly almoſt the whole year round. The fruit of the large palmettos, Mr Adanſon affirms to be of the bigneſs of an ordinary melon, but rounder: it is enveloped in two ſkins, as tough as leather, and as thick as ſtrong parchment; within the fruit is yellowiſh, and full of filaments faſtened to three large kernels in the middle. The negroes are very fond of this fruit, which, when baked under the aſhes, is ſaid to taſte like a quince.

CHAMANIM, in the Jewiſh antiquities, is the Hebrew name for that which the Greeks call *Pyreia* or *Pyrateria*; and St Jerome in Leviticus has tranſlated *ſimulachra*, in Iſaiah, *delubra*. Theſe chamanim were, according to Rabbi Solomon, idols expoſed to the ſun upon the tops of houſes. Abenezoa ſays they were portable chapels or temples made in the form of chariots, in honour of the ſun. What the Greeks call Pyreia were temples conſecrated to the ſun and fire, wherein a perpetual fire was kept up. They were built upon eminences; and were large encloſures without

(A) Sir Thomas during his reſidence in Italy, being particularly fond of natural hiſtory, ſpent ſome time at Puzzoli, where he was very attentive to the art of producing alum. This attention proved infinitely ſerviceable to his country, though of no great benefit to himſelf or his family, his attempt being attended with much difficulty and expence. It was begun about the year 1600, in the reign of Queen Elizabeth; but was not brought to any degree of perfection till ſome time in the reign of Charles I. by the aſſiſtance of one Ruſſel a Walloon, and two other workmen brought from the alum works at Rochelle. By one of the arbitrary acts of Charles, it was then deemed a mine royal, and granted to Sir Paul Pindar. The long parliament adjudged it a monopoly, and juſtly reſtored it to the original proprietors.

Chamarin || Chamber.

out covering, where the ſun was worſhipped. The Guebres, or worſhippers of fire, in Perſia and the Eaſt Indies, have ſtill theſe Pyreia. The word *chamanim* is derived from *Chaman*, which ſignified to warm or burn.

CHAMARIN, a word which occurs in ſeveral places of the Hebrew Bible, and is generally tranſlated the *prieſts of the idols*, or the *prieſts clothed in black*, becauſe *chamar* ſignifies "black," or "blackneſs." St Jerome, in the ſecond book of Kings, renders it *aruſpices*. In Hoſea and Zephaniah, he tranſlates it *ædituí* or church wardens. But the beſt commentators are of opinion, that by this word we are to underſtand the prieſts of the falſe gods, and in particular the worſhippers of fire; becauſe they were, as they ſay, dreſſed in black; or perhaps the Hebrews gave them this name in deriſion, becauſe, as they were continually employed in taking care about the fuel, and keeping up the fire, they were always as black as ſmiths or colliers. We find prieſts, among thoſe of Iſis, called *melanephori*, that is to ſay, that wear black; but whether this may be by reaſon of their dreſſing in black, or whether it were becauſe they wore a certain ſhining black veil in the proceſſions of this goddeſs, is not certain. *Camar*, in Arabic, ſignifies the "moon." Iſis is the ſame deity. Grotius thinks the Roman prieſts, called *camilli*, came from the Hebrew *chamarim*. Thoſe among the heathens who ſacrificed to the infernal gods were dreſſed in black.

CHAMBER, in building, a member of a lodging, or piece of an apartment, ordinarily intended for ſleeping in; and called by the Latins *cubiculum*. The word comes from the Latin *camera*; and that, according to *Nicod*, from the Greek καμαρα, *vault* or *curve*; the term *chamber* being originally confined to places arched over.

A complete apartment is to conſiſt of a hall, antichamber, *chamber*, and cabinet.

Privy CHAMBER. Gentlemen of the privy chamber, are ſervants of the king, who are to wait and attend on him and the queen at court, in their diverſions, &c. Their number is forty eight, under the lord chamberlain, twelve of whom are in quarterly waiting, and two of theſe lie in the privy chamber.

In the abſence of the lord chamberlain, or vice chamberlain, they execute the king's orders; at coronations, two of them perſonate the dukes of Aquitain and Normandy; and ſix of them, appointed by the lord chamberlain, attend ambaſſadors from crowned heads to their audiences, and in public entries. The gentlemen of the privy chamber were inſtituted by Henry VII.

CHAMBER, in *Policy*, the place where certain aſſemblies are held, alſo the aſſemblies themſelves. Of theſe ſome are eſtabliſhed for the adminiſtration of juſtice, others for commercial affairs.

Of the firſt kind are, 1. Star chamber, ſo called becauſe the roof was painted with ſtars; the authority, power, and juriſdiction of which, are abſolutely aboliſhed by the ſtatute 17 Car. I. 2. Imperial chamber of Spire, the ſupreme court of judicatory in the empire, erected by Maximilian I. This chamber has a right of judging by appeal: and is the laſt reſort of all civil affairs of the ſtates and ſubjects of the empire, in the ſame manner as the aulic council of Vienna. Chamber. Nevertheleſs it is reſtrained in ſeveral caſes: it takes no notice of matrimonial cauſes, theſe being left to the pope; nor of criminal cauſes, which either belong to particular princes or towns in their reſpective territories, or are cognizable by all the ſtates of the empire in a diet. By the treaty of Oſnaburg, in 1648, fifty aſſeſſors were appointed for this chamber, whereof 24 were to be Proteſtants, and 26 Catholics; beſides five preſidents, two of them Proteſtants, and the reſt Catholics. 3. Chamber of accounts, a ſovereign court in France, where accounts are rendered of all the king's revenues, inventories, and avowals thereof regiſtered; oaths of fidelity taken, and other things relating to the finances tranſacted. There are nine in France: that of Paris is the chief; it regiſters proclamations, treaties of peace, naturalizations, titles of nobility, &c. All the members wear long black gowns of velvet, of ſatin, or damaſk, according to their places. 4. Eccleſiaſtical chambers in France, which judge by appeal of differences about collecting the tythes. 5. Chamber of audience, or grand chamber, a juriſdiction in each parliament of France, the counſellors of which are called *jugeurs*, or judges, as thoſe of the chamber of inqueſts are called *raporteurs*, reporters of proceſſes by writing. 6. Chamber of the edict, or miparty, a court eſtabliſhed by virtue of the edict of pacification in favour of thoſe of the reformed religion. This chamber is now ſuppreſſed. 7. Apoſtolical chamber of Rome, that wherein affairs relating to the revenues of the church and the pope are tranſacted. This council conſiſts of the cardinal camerlinga, the governor of the rota, a treaſurer, an auditor, a preſident, one advocate-general, a ſolicitor-general, a commiſſary and twelve clerks. 8. Chamber of London, an apartment in Guildhall, where the city money is depoſited.

Of the laſt ſort are, the chambers of commerce: the chambers of aſſurance; and the royal or ſyndical chamber of bookſellers in France.

1. The chamber of commerce is an aſſembly of merchants and traders, where the affairs relating to trade are treated of. There are ſeveral eſtabliſhed in moſt of the chief cities of France; and in our own country we have lately ſeen chambers of this kind erected, particularly in London, Edinburgh, and Glaſgow. 2. Chamber of aſſurance in France, denotes a ſociety of merchants and others for carrying one the buſineſs of inſuring: but in Holland it ſignifies a court of juſtice, where cauſes relating to inſurances are tried. 3. Chamber of bookſellers in Paris, an aſſembly conſiſting of a ſyndic and aſſiſtants, elected by four delegates from the printers, and twelve from the bookſellers, to viſit the books imported from abroad, and to ſearch the houſes of ſellers of marbled paper, printſellers, and dealers in printed paper for hangings, who are prohibited from keeping any letters proper for printing books. In the viſitation of books, which ought to be performed by three perſons at leaſt from among the ſyndic and aſſiſtants, all libels againſt the honour of God, and the welfare of the ſtate, and all books printed either within or without the kingdom in breach of their regulations and privileges, are ſtopt, even with the merchandiſes that may happen to be in the bales with ſuch libels or other prohibited books.

Chamber, Chamberlain.

The days appointed for this chamber to meet are Tueſdays and Fridays, at two o'clock in the afternoon.

CHAMBER, in military affairs. 1. Powder chamber, or bomb chamber; a place ſunk under ground for holding the powder, or bombs, where they may be out of danger, and ſecured from the rain. 2. Chamber of a mine; the place, moſt commonly of a cubical form, where the powder is confined. 3. Chamber of a mortar; that part of the chaſe, much narrower than the reſt of the cylinder, where the powder lies. It is of different forms; ſometimes like a reverſed cone; ſometimes globular, with a neck for its communication with the cylinder, whence it is called a bottled chamber; but moſt commonly cylindrical, that being the form which is found by experience to carry the ball to the greateſt diſtance.

CHAMBERLAIN, an officer charged with the management and direction of a chamber. See CHAMBER, in *policy*.

There are almoſt as many kinds of chamberlains as chambers; the principal whereof are as follows:

Lord CHAMBERLAIN of Great Britain, the ſixth great officer of the crown; to whom belong livery and lodging in the king's court; and there are certain fees due to him from each archbiſhop or biſhop when they perform their homage to the king, and from all peers at their creation or doing their homage. At the coronation of every king, he is to have forty ells of crimſon velvet for his own robes. This officer, on the coronation day, is to bring the king his ſhirt, coif, and wearing clothes; and after the king is dreſſed, he claims his bed, and all the furniture of his chamber, for his fees: he alſo carries, at the coronation, the coif, gloves, and linen, to be uſed by the king on that occaſion; alſo the ſword and ſcabbard; the gold to be offered by the king, and the robes royal and crown: he dreſſes and undreſſes the king on that day, waits on him before and after dinner, &c. To this officer belongs the care of providing all things in the houſe of lords, in the time of parliament; to him alſo belongs the government of the palace of Weſtminſter: he diſpoſes likewiſe of the ſword of ſtate, to be carried before the king, to what lord he pleaſes.

The great chamberlain of Scotland was ranked by King Malcolm, as the third great officer of the crown, and was called *Camerarius Domini Regis*. Before a treaſurer was appointed, it was his duty to collect the revenue of the crown; and he diſburſed the money neceſſary for the king's expences, and the maintenance of the king's houſehold. From the time that a treaſurer was appointed, his province was limited to the boroughs throughout the kingdom, where he was a ſort of juſtice general, as he had a power for judging of all crimes committed within the borough, and of the crime of foreſtalling. He was to hold chamberlain ayres every year. He was ſupreme judge; nor could any of his decrees be queſtioned by any inferior judicatory. His ſentences were put in execution by the magiſtrates of the boroughs. He alſo regulated the prices of proviſions within the borough, and the fees of the workmen in the mint houſe. His ſalary was only 200l. a-year. The ſmallneſs of his ſalary, and his great powers, had no doubt been the cauſes of much oppreſſion in this officer, and the chamberlain ayre was called rather a legal robbery than a court of juſtice; and when the combined lords ſeized King James VI. Auguſt 24. 1582, and carried him to Ruthven Caſtle, they iſſued a proclamation in the king's name, diſcharging the chamberlain ayres to be kept. The chamberlain had great fees ariſing from the profits of eſcheats, fines, tolls, and cuſtoms. This office was granted heritably to the family of Stuart duke of Lenox: and when their male line failed, King Charles II. conferred it in like manner upon his natural ſon, whom he created duke of Monmouth, and on his forfeiture it went to the duke of Lenox; but that family ſurrendered the office to the crown in 1703.

Chamberlain, Chamberlayne.

Lord CHAMBERLAIN of the Houſehold, an officer who has the overſight and direction of all officers belonging to the king's chambers, except the precinct of the king's bedchamber.

He has the overſight of the officers of the wardrobe at all his majeſty's houſes, and of the removing wardrobes, or of beds, tents, revels, muſic, comedians, hunting, meſſengers, &c. retained in the king's ſervice. He moreover has the overſight and direction of the ſerjeants at arms, of all phyſicians, apothecaries, ſurgeons, barbers, the king's chaplains, &c. and adminiſters the oath to all officers above ſtairs.

Other chamberlains are thoſe of the king's court of exchequer, of North Wales, of Cheſter, of the city of London, &c. in which caſes this officer is generally the receiver of all rents and revenues belonging to the place whereof he is chamberlain.

In the exchequer there are two chamberlains, who keep a controlment of the pells of receipts and exitus, and have certain keys of the treaſury, records, &c.

CHAMBERLAIN of London keeps the city money, which is laid up in the chamber of London: he alſo preſides over the affairs of maſters and apprentices, and makes free of the city, &c.

His office laſts only a year; but the cuſtom uſually obtains to re-chooſe the ſame perſon, unleſs charged with any miſdemeanour in his office.

CHAMBERLAYNE, EDWARD, deſcended from an ancient family, was born in Glouceſterſhire 1616, and made the tour of Europe during the diſtractions of the civil war. After the Reſtoration, he went as ſecretary with the earl of Carliſle, who carried the order of the Garter to the king of Sweden; was appointed tutor to the duke of Grafton, natural ſon of Charles II. and was afterwards pitched on to inſtruct Prince George of Denmark in the Engliſh tongue. He died in 1703, and was buried in a vault in Chelſea churchyard: his monumental inſcription mentions ſix books of his writing; and that he was ſo deſirous of doing ſervice to poſterity, that he ordered ſome copies of his books to be covered with wax, and buried with him. That work by which he is beſt known, is his *Angliæ Notitiæ*, or *the Preſent State of England*, which has been often ſince printed.

CHAMBERLAYNE, *John*, ſon to the author of "The Preſent State of England," and continuator of that uſeful work, was admitted into Trinity College, Oxford, 1685; but it doth not appear that he took any degree. Beſide the *Continuation* juſt mentioned, he was author of "Diſſertations hiſtorical, critical, theological, and moral, on the moſt memorable events of the Old and New Teſtaments, with Chronological Tables;" one vol.

Chamberry, Chambers.

vol. folio; and translated a variety of works from the French, Dutch, aud other languages. He likewise was F. R. S. and communicated some pieces, inserted in the Philosophical Transactions. It was said of him that he understood sixteen languages; but it is certain that he was master of the Greek, Latin, French, High and Low Dutch, Portuguese, and Italian. Though he was qualified for employment, he had none but that of gentleman usher to George prince of Denmark. After a useful and well-spent life, he died in the year 1724. He was a very pious and good man, and earnest in promoting the advancement of religion, and the interest of true Christianity; for which purpose he kept a large correspondence abroad.

CHAMBERRY, a considerable and populous town of Italy, in Savoy, with a castle. It is capital of the duchy, and well built, but has no fortifications. It is watered by several streams, which have their sources in St Martin's hill, and run through several of the streets. There are piazzas under most part of the houses, where people may walk dry in the worst weather. It hath large and handsome suburbs; and in the centre of the town is the royal palace. The parliament meet here, which is composed of four presidents, and a pretty large number of senators, being the supreme tribunal of the whole duchy. The principal church is St Leger, and the Jesuits college is the most magnificent of all the monasteries. E. Long. 5. 50. N. Lat. 45. 25.

CHAMBERS, David, a Scots historian, priest, and lawyer, was born in the shire of Ross, about the year 1530, and educated in the university of Aberdeen. From thence he went to France and Italy, where he continued some time, particularly at Boulogne, where, in 1556, he was a pupil of Marianus Sozenus.

After his return to Scotland, he was appointed, by Queen Mary, parson of Suddy and chancellor of Ross. He was soon after employed in digesting the laws of Scotland, and was principally concerned in publishing the acts of parliament of that kingdom by authority in 1566. He was also appointed one of the lords of session, and continued her majesty's faithful servant till her declining fortune obliged her adherents to seek for refuge in other kingdoms. Chambers went first to Spain, where he was graciously received by King Philip; and thence he travelled to Paris, where he was no less kindly received by Charles IX. of that kingdom, to whom, in 1572, he presented his history of Scotland, &c. He died at Paris in the year 1592, much regretted (says Mackenzie) by all who knew him. His writings were chiefly calculated to assist his royal mistress, and to extol the wisdom of the Scots nation.

Chambers, *Ephraim*, author of the Scientific Dictionary which goes under his name, was born at Milton, in the county of Westmorland. His parents were dissenters of the Presbyterian persuasion; and his education no other than that common one which is intended to qualify a youth for trade and commerce. When he became of a proper age, he was put apprentice to Mr Senex the globe-maker, a business which is connected with literature, and especially with astronomy and geography. It was during Mr Chambers's residence with this skilful mechanic, that he contracted that taste for science and learning which accompanied him through life, and directed all his pursuits. It was even at this time that he formed the design of his grand work, the "Cyclopædia;" and some of the first articles of it were written behind the counter. Having conceived the idea of so great an undertaking, he justly concluded that the execution of it would not consist with the avocations of trade; and therefore he quitted Mr Senex, and took chambers at Gray's Inn, where he chiefly resided during the rest of his days. The first edition of the *Cyclopædia*, which was the result of many years intense application, appeared in 1728, in two vols. folio. It was published by subscription, the price being 4l. 4s.; and the list of subscribers was very respectable. The dedication, which was to the king, is dated October 15. 1727. The reputation that Mr Chambers acquired by his execution of this undertaking, procured him the honour of being elected F. R. S. November 6. 1729. In less than ten years time a second edition became necessary; which accordingly was printed, with corrections and additions, in 1738; and was followed by a third the very next year. Chambers.

Although the Cyclopædia was the grand business of Mr Chambers's life, and may be regarded as almost the sole foundation of his fame, his attention was not wholly confined to this undertaking. He was concerned in a periodical publication, entitled, "The Literary Magazine," which was begun in 1735. In this work he wrote a variety of articles, and particularly a review of Morgan's "Moral Philosophy." He was engaged likewise, in conjunction with Mr John Martyn. F. R. S. and professor of botany at Cambridge, in preparing for the press a translation and abridgment of the "Philosophical History and Memoirs of the Royal Academy of Sciences at Paris, or an Abridgment of all the Papers relating to Natural Philosophy, which have been published by the Members of that illustrious Society." This undertaking, when completed, was comprised in five volumes, 8vo, which did not appear till 1742, some time after our author's decease, when they were published under the joint names of Mr Martyn and Mr Chambers. Mr Martyn, in a subsequent publication, hath passed a severe censure upon the share which his fellow-labourer had in the abridgment of the Parisian papers. The only work besides, that we find ascribed to Mr Chambers, is a translation of the *Jesuit's Perspective*, from the French; which was printed in 4to, and hath gone through several editions. Mr Chambers's close and unremitting attention to his studies at length impaired his health, and obliged him occasionally to take a lodging at Canonbury-house, Islington. This not having greatly contributed to his recovery, he made an excursion to the south of France, but did not reap that benefit from it which he had himself hoped, and his friends wished. Returning to England, he died at Canonbury-house, and was buried at Westminster; where the following inscription, written by himself, is placed on the north side of the cloisters of the Abbey:

Multis pervulgatus,
Paucis notus;
Qui vitam, inter lucem et umbram,
Nec eruditus, nec idiota,

Chambre || Chamos.

Literis deditus, tranſegit; ſed ut homo
Qui humani nihil à ſe alienum putat.
Vita ſimul, et laboribus functus,
Hic requieſcere voluit,
EPHRAIM CHAMBERS, R. S. S.
Obiit xv Maii, MDCCXL.

After the author's death, two more editions of his Cyclopædia were publiſhed. A ſupplement, which extended to two volumes more, was afterwards compiled: and in the year 1778 was publiſhed an edition of both, incorporated into one alphabet, by Dr Rees, which was completed in four volumes folio. Another edition which is now (1803) going on, and is to extend to 20 vols 4to, has been undertaken by the ſame gentleman.

CHAMBRE, MARTIN CUREAU DE LA, phyſician in ordinary to the French king, was diſtinguiſhed by his knowledge in medicine, philoſophy, and polite learning. He was born at Mons, and was received into the French academy in 1635, and aftewards into the academy of ſciences. He wrote a great number of works; the principal of which are, 1. The characters of the paſſions. 2. The art of knowing men. 3. On the knowledge of beaſts, &c. He died at Paris in 1669.

CHAMELEON. See LACERTA, ERPETOLOGY *Index*.

CHAMFERING, in *Architecture*, a phraſe uſed for cutting any thing aſlope on the under ſide.

CHAMIER, DANIEL, an eminent Proteſtant divine, born in Dauphiny. He was many years preacher at Montellimart; from whence he went in 1612 to Montaubon, to be profeſſor of divinity in that city, and was killed by a cannon ball during the ſiege in 1621. The moſt conſiderable of his works is his *Panſtratia Catholica*, or, "Wars of the Lord," in four volumes folio; in which he treats very learnedly of the controverſies between the Proteſtants and Roman Catholics.

CHAMOIS, or CHAMOIS-GOAT, in *Zoology*. See CAPRA, MAMMALIA *Index*.

CHAMOMILE. See ANTHEMIS, BOTANY *Index*.

CHAMOS, or CHEMOSH, the idol or god of the Moabites.

The name of *chamos* comes from a root which, in Arabic, ſignifies to *make haſte*; for which reaſon many believe Chamos to be the ſun, whoſe precipitate courſe might well procure it the name of ſwift or ſpeedy. Others have confounded Chamos with the god *Hammon*, adored not only in Libya and Egypt, but alſo in Arabia, Ethiopia, and the Indies. Macrobius ſhows that Hammon was the ſun; and the horns, with which he was repreſented, denoted his rays. Calmet is of opinion that the god Hamonus, and Apollo Chomeus, mentioned by Strabo and Ammianus Marcellinus, was the very ſame as Chamos or the ſun. Theſe deities were worſhipped in many of the eaſtern provinces. Some who go upon the reſemblance of the Hebrew term *chamos* to that of the Greek *comos*, have believed Chamos to ſignify the god Bacchus, the god of drunkenneſs, according to the ſignification of the Greek *comos*. St Jerome, and with him moſt other interpreters, take Chamos and Peor for the ſame deity. But it ſeems that Baal Peor was the ſame as Tammuz or Adonis; ſo that Chamos muſt be the god whom the heathens call the ſun.

CHAMOUNI, one of the elevated valleys of the Alps, ſituated at the foot of Mount Blanc. See ALPS and BLANC. Chamouni.

The firſt ſtrangers whom a curioſity to viſit the glaciers drew to Chamouni (M. Sauſſure obſerves), certainly conſidered this valley as a den of robbers; for they came armed cap-a-pee, attended with a troop of domeſtics armed in the ſame manner: they would not venture into any houſe; they lived in tents which they had brought along with them; fires were kept burning, and centinels on guard the whole night over. It was in the year 1741 that the celebrated traveller Pocock, and another Engliſh gentleman called Wyndham, undertook this intereſting journey. It is remembered by the old men of Chamouni, and they ſtill laugh at the fears of the travellers, and at their unneceſſary precautions. For 20 or 25 years after this period, the journey was made but ſeldom, and then chiefly by Engliſhmen, who lodged with the curate: for, when I was there in 1760, and even for four or five years afterwards, there was no habitable houſe except one or two miſerable inns, like thoſe in villages that are little frequented. But now that this expedition has gradually become ſo faſhionable, three large and good inns, which have been ſucceſſively built, are hardly ſufficient to contain the travellers that come during the ſummer from all quarters.

This concourſe of ſtrangers, and the money they leave behind them at Chamouni, have ſomewhat affected the ancient ſimplicity of the inhabitants, and even the purity of their manners. Nobody, however, has any thing to fear from them: the moſt inviolable fidelity is obſerved with reſpect to travellers; they are only expoſed to a few importunate ſolicitations, and ſome ſmall artifices dictated by the extreme eagerneſs with which the inhabitants offer their ſervices as guides.

The hope of obtaining this employment brings together, round a traveller, almoſt all the men in every village through which he paſſes, and makes him believe that there are a great many in the valley; but there are very few at Chamouni in ſummer. Curioſity, or the hope of making money, draws many to Paris and into Germany: beſides, as the ſhepherds of Chamouni have the reputation of excelling in the making of cheeſe, they are in great requeſt in the Tarentaiſe, in the valley of Aoſte, and even at greater diſtances; and they receive there, for four or five months in ſummer, very conſiderable wages. Thus the labours of the field devolve almoſt entirely on the women, even ſuch as in other countries fall ſolely on the men; as mowing, cutting of wood, and thraſhing: even the animals of the ſame ſex are not ſpared, for the cows there are yoked in the plough.

The only labours that belong excluſively to the men are the ſeeking for rock cryſtal and the chaſe. Happily they are now leſs employed than formerly in the firſt of theſe occupations; I ſay happily, for many of them periſhed in this purſuit. The hope of enriching themſelves quickly by the diſcovery of a cavern filled with fine cryſtals, was ſo powerful a motive, that they expoſed themſelves in the ſearch to the moſt alarming dangers; and hardly a year paſſed without ſome of them periſhing in the ſnows, or among the precipices.

The principal indication of the grottoes, or cryſtal ovens as they are here called, are veins of quartz, which

appear.

Chamouni. appear on the outside of the rocks of granite, or of the laminated rock. These white veins are seen at a distance, and often at great heights, on vertical and inaccessible places. The adventurers endeavour to arrive at these, either by fabricating a road across the rocks, or by letting themselves down from above suspended by ropes. When they reach the place, they gently strike the rock; and if the stone returns a hollow sound, they endeavour to open it with a hammer, or to blow it up with powder. This is the principal method of searching: but young people, and even children, often go in quest of these crystals over the glaciers, where the rocks have lately fallen down. But whether they consider these mountains as nearly exhausted, or that the quantity of crystal found at Madagascar has too much lowered the price of this fossil, there are now but few people that go in search of it, and perhaps there is not a single person at Chamouni that makes it his only occupation. They go however occasionally, as to a party of pleasure.

But the chase of the chamois goat, as dangerous, and perhaps more so than the seeking for crystal, still occupies many inhabitants of the mountains, and carries off, in the flower of their age, many men whose lives are most valuable to their families. And when we are informed how this chase is carried on, we will be astonished that a course of life, at once so laborious and perilous, should have irresistible attractions for those who have been accustomed to it.

The chamois hunter generally sets out in the night, that he may reach by break of day the most elevated pastures where the goats come to feed, before they arrive. As soon as he discovers the place where he hopes to find them, he surveys it with his glass. If he finds none of them there, he proceeds, always ascending; whenever he descries any, he endeavours to get above them, either by stealing along some gully, or getting behind some rock or eminence. When he is near enough to distinguish their horns, which is the mark by which he judges of the distance, he rests his piece on a rock, takes his aim with great composure, and rarely misses. This piece is a rifle-barrelled carabine, into which the ball is thrust, and these carabines often contain two charges, though they have but one barrel; the charges are put one above another, and are fired in succession. If he has wounded the chamois, he runs to his prey, and for security he hamstrings it; then he considers his way home: if the road is difficult, he skins the chamois, and leaves the carcass; but, if it is practicable, he throws the animal on his shoulders, and bears him to his village, though at a great distance, and often over frightful precipices: he feeds his family with the flesh, which is excellent, especially when the creature is young; and he dries the skins for sale.

But if, as is the most common case, the vigilant chamois perceives the approach of the hunter, he immediately takes flight among the glaciers, through the snows, and over the most precipitous rocks. It is particularly difficult to get near these animals when there are several together; for then one of them, while the rest are feeding, stands as a centinel on the point of some rock that commands a view of the avenues leading to the pasture; and as soon as he perceives any object of alarm, he utters a sort of hiss; at which the others instantly gather round him to judge for themselves of the nature of the danger: if it is a wild beast, Chamouni. or a hunter, the most experienced puts himself at the head of the flock, and away they fly, ranged in a line, to the most inaccessible retreats.

It is here that the fatigues of the hunter begin; instigated by his passion for the chase, he is insensible to danger: he passes over snows, without thinking of the horrid precipices they conceal; he entangles himself among the most dangerous paths, and bounds from rock to rock, without knowing how he is to return. Night often surprises him in the midst of his pursuit; but he does not for that reason abandon it; he hopes that the same cause will arrest the flight of the chamois, and that he will next morning overtake them. Thus he passes the night, not at the foot of a tree, like the hunter of the plain; not in a grotto, softly reclined on a bed of moss; but at the foot of a rock, and often on the bare points of shattered fragments, without the smallest shelter. There, all alone, without fire, without light, he draws from his bag a bit of cheese, with a morsel of oaten bread, which make his common food; bread so dry, that he is sometimes obliged to break it between two stones, or with the hatchet he carries with him to cut out steps in the ice. Having thus made his solitary and frugal repast, he puts a stone below his head for a pillow, and goes to sleep, dreaming on the route which the chamois may have taken. But soon he is awakened by the freshness of the morning; he gets up, benumbed with cold; surveys the precipices, which he must traverse, in order to overtake his game; drinks a little brandy, of which he is always provided with a small portion, and sets out to encounter new dangers. Hunters sometimes remain in these solitudes for several days together, during which time their families, their unhappy wives in particular, experience a state of the most dreadful anxiety: they dare not go to rest for fear of seeing their husbands appear to them in a dream; for it is a received opinion in the country, that when a man has perished, either in the snow, or on some unknown rock, he appears by night to the person he held most dear, describes the place that proved fatal to him, and requests the performance of the last duties to his corpse.

" After this picture of the life which the chamois hunters lead, could one imagine that this chase would be the object of a passion absolutely unsurmountable? I knew a well-made, handsome man, who had just married a beautiful woman :—' My grandfather said he to me, lost his life in the chase; so did my father; and I am persuaded that I too shall die in the same manner; this bag which I carry with me when I hunt I call my grave clothes, for I am sure I will have no other; yet if you should offer to make my fortune on condition of abandoning the chase of the chamois, I could not consent.' I made some excursions on the Alps with this man: His strength and address were astonishing; but his temerity was greater than his strength; and I have heard, that two years afterwards, he missed a step on the brink of a precipice, and met with the fate he had expected. *Voyages dans les Alpes, par M. Saussure*, tom. iii.

" The few who have grown old in this employment bear upon their faces the marks of the lives they have led. A savage look, something in it haggard and wild, makes them be known in the midst of a crowd, even

Chamouni. when they are not in their hunting dreſs. And undoubtedly it is this ill look which makes ſome ſuperſtitious peaſants believe that they are ſorcerers, that they have dealings with the devil in their ſolitudes, and that it is he who throws them down the rocks. What then can be the paſſionate inducement to this courſe of life? It is not avarice, at leaſt it is not an avarice conſiſtent with reaſon: the moſt beautiful chamois is never worth more to the perſon that kills it than a dozen of francs, even including the value of its fleſh: and now that the number is ſo much diminiſhed, the time loſt before one can be taken is much more than its value. But it is the very dangers that attend the purſuit, thoſe alternations of hope and fear, the continual agitation and exerciſe which theſe emotions produce in the mind, that inſtigate the hunter: they animate him as they do the gameſter, the warrior, the ſailor, and even to a certain degree, the naturaliſt of the Alps; whoſe life, in ſome meaſure, pretty much reſembles that of the hunter, whoſe manners we have deſcribed."

But there is another kind of hunting, which is neither dangerous nor laborious, nor fatal to any one but to the poor animals that are the objects of it.—Theſe are the marmots, animals that inhabit the high mountains; where in ſummer they ſcoop out holes, which they line with hay, and retire to at the beginning of autumn. Here they grow torpid with the cold, and remain in a ſort of lethargy, till the warmth of the ſpring returns to quicken their languid blood, and to recal them to life. When it is ſuppoſed that they have retired to their winter abode, and before the ſnow has covered the high paſtures where their holes are made, people go to unharbour them. They are found from 10 to 13 in the ſame hole, heaped upon one another, and buried in the hay. Their ſleep is ſo profound, that the hunter often puts them into his bag, and carries them home without their awaking. The fleſh of the young is good, though it taſtes of oil, and ſmells ſomewhat of muſk; the fat is uſed in the cure of rheumatiſms and pains, being rubbed on the parts affected; but the ſkin is of little value, and is ſold for no more than five or ſix ſols. Notwithſtanding the little benefit they reap from it, the people of Chamouni go in queſt of this animal with great eagerneſs, and its numbers accordingly diminiſh very ſenſibly.

It has been ſaid, that marmots, in order to tranſport the hay into their holes, uſe one of their number laid on his back as a cart; but this is fabulous, for they are ſeen carrying the hay in their mouths. Nor is it for food that they gather it, but for a bed, and in order to ſhut out the cold, and to guard the avenues of their retreat from enemies. When they are taken in autumn, their bowels are quite empty, and even as clean as if they had been waſhed with water; which proves that their torpidity is preceded by a faſt, and even by an evacuation; a wiſe contrivance of nature for preventing their accumulated fæces from growing putrid or too dry, in the long lethargy they are expoſed to. They alſo continue a few days after their revival without eating, probably to allow the circulation and digeſtive power to recover their activity. At firſt, leaving their holes, they appear ſtupid and dazzled with the light; they are at this time killed with ſticks, as they do not endeavour to fly, and their bowels are then alſo quite empty. They are not very lean when they awake, but grow more ſo for a few days after they firſt come abroad. Their blood is never congealed, however profound their ſleep may be; for at the time that it is deepeſt, if they are bled, the blood flows as if they were awake. Chamouni, Champagne.

In theſe countries the period is ſo ſhort between the diſſolution of the ſnow, and its return, that grain has hardly time to come to maturity. Mr Sauſſure mentions a very uſeful and ingenious practice, invented by the mountaineers of the Argentiere, for enlarging this period, "I obſerved (ſays he, in the middle of the valley, ſeveral large ſpaces where the ſurface of the ſnow exhibited a ſingular appearance, ſomewhat reſembling a piece of white cloth ſpotted with black. While I was endeavouring to divine the cauſe of this phenomenon, I diſcovered ſeveral women walking with meaſured pace, and ſowing ſomething in handfuls that was black; and which being ſcattered, regularly diverging, on the ſurface of the ſnow, formed that ſpotted appearance that I had been admiring. I could not conceive what ſeed ſhould be ſown on ſnow ſix feet deep; but my guide aſtoniſhed at my ignorance, informed me that it was black earth ſpread upon the ſnow to accelerate its melting; and thus to anticipate, by a fortnight or three weeks, the time of labouring the fields and ſowing. I was ſtruck with the elegant ſimplicity of a practice ſo uſeful, the effects of which I already ſaw very evidently in places which had not been thus treated above three days.

"As to the inhabitants of Chamouni, the men, like thoſe of moſt high valleys, are neither well made nor tall: but they are nervous and ſtrong, as are alſo the women. They do not attain to a great age: men of 80 are very rare. Inflammatory diſeaſes are the moſt fatal to them; proceeding no doubt, from obſtructed perſpiration, to which the inconſtant temperature of the climate expoſes them.

"They are in general honeſt, faithful, and diligent in the practice of religious duties. It would, for inſtance, be in vain to perſuade them to go anywhere on a holiday before hearing maſs. They are economical, but charitable. There are amongſt them neither hoſpitals nor foundations for the poor; but orphans and old people, who have no means of ſubſiſtence, are entertained by every inhabitant of a pariſh in his turn. If a man is prevented by age or infirmities from taking charge of his affairs, his neighbours join among themſelves and do it for him.

"Their mind is active and lively, their temper gay, with an inclination to raillery: they obſerve, with ſingular acuteneſs, the ridiculous in ſtrangers, and turn it into a fund of very facetious merriment among themſelves, yet they are capable of ſerious thinking: many of them have attacked me on religious and metaphyſical ſubjects: not as profeſſing a different faith from theirs, but on general queſtions, which ſhowed they had ideas independent of thoſe they were taught."

CHAMPAGNE, a conſiderable province of France, about 162 miles in length, and 112 in breadth, bounded on the north by Hainault and Luxembourg, on the eaſt by Lorrain and the Franche Compte, on the ſouth by Burgundy, and on the weſt by the Iſle of

France

Champagne Proper || Cha npion.

France and Soiſſonnois. It has a great number of rivers, the principal of which are the Meuſe, the Seine, the Marne, the Aube, and the Aine. Its principal trade conſiſts in excellent wine, all ſorts of corn, linen cloth, woollen ſtuffs, cattle, and ſheep. It is alſo divided into the higher and lower; and Troyes is the capital town. Its ſubdiviſions are Champagne Proper, and Rhemois, the Retelois, the Pertois, the Village, Baſigni, the Senonois, and the Brie Champenois. It now forms the departments of Ardennes, Aube, Marne, and Upper Marne.

Champagne Proper, is one of the eight parts of Champagne, which comprehends the town of Troyes, Chalons, St Menehould, Eperney, and Vertus.

CHAMPAIN, or *Point Champain*, in *Heraldry*, a mark of diſhonour in the coat of arms of him who kills a priſoner of war after he has cried quarter.

CHAMPERTRY, in *Law*, a ſpecies of MAINTENANCE, and puniſhed in the ſame manner; being a bargain with the plaintiff or defendant *campum partire*, "to divide the land," or other matter ſued for, between them, if they prevail at law; whereupon the champertror is to carry on the party's ſuit at his own expence. Thus *champart* in the French law, ſignifies a ſimilar diviſion of profits, being a part of the crop annually due to the landlord by bargain or cuſtom. In our ſenſe of the word, it ſignifies the purchaſing of a ſuit or right of ſuing; a practice ſo much abhorred by our law, that it is one main reaſon why a *choſe* in action, or thing of which one hath the right but not the poſſeſſion, is not aſſignable in common law; becauſe no man ſhould purchaſe any pretence to ſue in another's right. Theſe peſts of civil ſociety, that are perpetually endeavouring to diſturb the repoſe of their neighbours, and officiouſly interfering in other men's quarrels even at the hazard of their own fortunes, were ſeverely animadverted on by the Roman law; and were puniſhed by the forfeiture of a third part of their goods and perpetual infamy. Hitherto alſo muſt be referred the proviſion of the ſtatute 32 Henry VIII. c. 9. that no one ſhall ſell or purchaſe any pretended right or title to land, unleſs the vender hath received the profits thereof for one whole year before ſuch grant, or hath been in actual poſſeſſion of the land, or of the reverſion or remainder; on pain that both purchaſer and vender ſhall each forfeit the value of ſuch land to the king and the proſecutor.

CHAMPION, a perſon who undertakes a combat in the place or quarrel of another; and ſometimes the word is uſed for him who fights in his own cauſe.

It appears, that champions, in the juſt ſenſe of the word, were perſons who fought inſtead of thoſe that, by cuſtom, were obliged to accept the duel, but had a juſt excuſe for diſpenſing with it, as being too old, infirm, or being eccleſiaſtics, and the like. Such cauſes as could not be decided by the courſe of common law were often tried by ſingle combat; and he who had the good fortune to conquer, was always reputed to have juſtice on his ſide. See the article BATTLE.

Champion of the king (*campio regis*), is an ancient officer, whoſe office is, at the coronation of our kings, when the king is at dinner, to ride armed *cap-a-pee*, into Weſtminſter-hall, and by the proclamation of a herald make a challenge, "That if any man ſhall deny the king's title to the crown, he is there ready to defend it in ſingle combat, &c." which being done, the king drinks to him, and ſends him a gilt cup with a cover full of wine, which the champion drinks, and hath the cup for his fee. This office at the coronation of King Richard II. when Baldwin Freville exhibited his petition for it, was adjudged from him to his competitor Sir John Dymocke (both claiming from Marmion), and hath continued ever ſince in the family of the Dymockes; who hold the manor of Sinvelſby in Lincolnſhire, hereditary from the Marmions by grand ſerjeantry, viz. that the lord thereof ſhall be the king's champion as aforeſaid. Accordingly Sir Edward Dymocke performed this office at the coronation of King Charles II.; a perſon of the name of Dymocke performed at the coronation of his preſent majeſty George III.

Champlain || Chance.

CHAMPLAIN, SAMUEL DE, a celebrated French navigator, the founder of the colony of New France, or Canada. He built Quebec; and was the firſt governor of the colony in 1603. Died after 1649. See QUEBEC.

CHANANÆI, in *Ancient Geography*, the name of the ancient inhabitants of Canaan in general, deſcendants of Canaan; but peculiarly appropriated to ſome one branch; though uncertain which branch or ſon of Canaan it was, or how it happened that they preferred the common gentilitious name to one more appropriated as deſcendants of one of the ſons of Canaan; unleſs from their courſe of life, as being in the mercantile way, the import of the name of *Canaan*; and for which their ſituation was greatly adapted, they living on the ſea and about Jordan, and thus occupying the greater part of the Land of Promiſe.

CHANCE, a term we apply to events, to denote that they happen without any neceſſary or foreknown cauſe. See CAUSE.

Our aim is, to aſcribe thoſe things to *chance* which are not neceſſarily produced as the natural effects of any proper cauſe: but our ignorance and precipitancy lead us to attribute effects to *chance* which have a neceſſary and determinate cauſe.

When we ſay a thing happens *by chance*, we really mean no more than that its cauſe is unknown to us: not, as ſome vainly imagine, that *chance* itſelf can be the cauſe of any thing.

The caſe of the painter, who unable to expreſs the the foam at the mouth of a horſe he had painted, threw his ſponge in deſpair at the piece, and *by chance*, did that which he could not before do by deſign, is an eminent inſtance of the force of *chance*: yet, it is obvious, all we mean here by *chance*, is, that the painter was not aware of the effect; or that he did not throw the ſponge with ſuch a view: not but that he actually did every thing neceſſary to produce the effect; inſomuch, that conſidering the direction wherein he threw his ſponge, together with its form, ſpecific gravity, the colours wherewith it was ſmeared, and the diſtance of the hand from the piece, it was impoſſible, on the preſent ſyſtem of things, the effect ſhould not follow.

Chance is frequently perſonified, and erected into a chimerical being, whom we conceive as acting arbitrarily,

Chance, Chance-Medley.

rily, and producing all the effects whose real causes do not appear to us; in which sense the word coincides with the τυχη, *fortuna*, of the ancients.

CHANCE is also used for the manner of deciding things, the conduct or direction whereof is left at large, and not reducible to any determinate rules or measures, or where there is no ground for preference: as at cards, dice, lotteries, &c.

For the laws of CHANCE, *or the Proportion of Hazard in Gaming*, see GAME.

The ancient *sortilege*, or *chance*, M. Placette observes, was instituted by God himself: and in the Old Testament we find several standing laws and express commands which prescribed its use on certain occasions. Hence the Scripture says, "The *lot*, or *chance*, fell on Matthias," when it was in question who should fill Judas's place in the apostolate.

Hence also arose the *sortes sanctorum*, or method of determining things, among the ancient Christians, by opening some of the sacred books, and pitching on the first verse they cast their eye on, as a sure prognostic of what was to befal them. The *sortes Homericæ*, *Virgilianæ*, *Præneſtinæ*, &c. used by the heathens, were with the same view, and in the same manner. See SORTES.

St Augustine seems to approve of this method of determining things future, and owns that he had practised it himself; grounded on this supposition, that God presides over *chance*; and on Prov. xvi. 33.

Many among the modern divines hold *chance* to be conducted in a particular manner by Providence; and esteem it an extraordinary way which God uses to declare his will, and a kind of immediate revelation.

CHANCE-Medley, in *Law*, is where one is doing a lawful act, and a person is killed by chance thereby; for if the act be unlawful, it is felony. If a person cast, not intending harm, a stone, which happens to hit one, whereof he dies; or shoots an arrow in a highway, and another that passeth by is killed therewith; or if a workman, in throwing down rubbish from a house after warning to take care, kills a person; or a schoolmaster in correcting his scholar, a master his servant, or an officer in whipping a criminal in a reasonable manner, happens to occasion his death; it is chance-medley and misadventure. But if a man throw stones in a highway where persons usually pass; or shoot an arrow, &c. in a market-place among a great many people; or if a workman cast down rubbish from a house in cities and towns where people are continually passing; or a schoolmaster, &c. correct his servant or scholar, &c. exceeding the bounds of moderation; it is manslaughter: and if with an improper instrument of correction, as with a sword or iron bar, or by kicking, stamping, &c. in a cruel manner, it is murder. If a man whips his horse in a street to make him gallop, and the horse runs over a child and kills it, it is manslaughter: but if another whips the horse, it is manslaughter in him, and chance-medley in the rider. And if two are fighting, and a third person coming to part them is killed by one of them without any evil intent, yet this is murder in him, and not manslaughter by chance-medley or misadventure. In chance-medley, the offender forfeits his goods; but hath a pardon of course.

Chancel, Chancellor.

CHANCEL, is properly that part of the choir of a church, between the altar or communion-table and the balustrade or rail that encloses it, where the minister is placed at the celebration of the communion. The word comes from the Latin *cancellus*, which in the lower Latin is used in the same sense, from *cancelli*, "lattices or cross bars," wherewith the chancels were anciently encompassed, as they now are with rails. The right of a seat and a sepulchre in the chancels is one of the privileges of founders.

CHANCELLOR, was at first only a chief notary or scribe under the emperors; and was called *cancellarius*, because he sat behind a lattice (in Latin *cancellus*) to avoid being crowded by the people: though some derive the word from *cancellare*, "to cancel." (See CHANCERY). This officer was afterwards invested with several judicial powers, and a general superintendency over the rest of the officers of the prince. From the Roman empire it passed to the Roman church, ever emulous of imperial state: and hence every bishop has to this day his chancellor, the principal judge of his consistory. And when the modern kingdoms of Europe were established upon the ruins of the empire, almost every state preserved its chancellor with different jurisdictions and dignities, according to their different constitutions. But in all of them he seems to have had the supervision of all charters, letters, and such other public instruments of the crown as were authenticated in the most solemn manner: and therefore, when seals came in use, he had always the custody of the king's great seal.

Lord High CHANCELLOR *of Great Britain*, or *Lord Keeper of the Great Seal*, is the highest honour of the long robe, being created by the mere delivery of the king's great seal into his custody: whereby he becomes, without writ or patent, an officer of the greatest weight and power of any now subsisting in the kingdom. He is a privy counsellor by his office; and, according to Lord Chancellor Ellesmere, prolocutor of the house of lords by prescription. To him belongs the appointment of all the justices of the peace throughout the kingdom. Being in former times commonly an ecclesiastic (for none else were then capable of an office so conversant in writing), and presiding over the royal chapel, he became keeper of the king's conscience; visitor, in right of the king, of all hospitals and colleges of the king's foundation; and patron of all the king's livings under the value of 20l. per annum in the king's books. He is the general guardian of all infants, idiots, and lunatics; and has the general superintendence of all charitable uses in the kingdom; and all this over and above the vast extensive jurisdiction which he exercises in his judicial capacity in the court of chancery. He takes a precedence of every temporal lord except the royal family, and of all others except the archbishop of Canterbury. See CHANCERY.

CHANCELLOR, in Scotland, was the chief in matters of justice. In the laws of King Malcolm II. he is placed before all other officers; and from these it appears that he had the principal direction of the chancery, or chancellary as it is called, which is his proper office. He had the custody of the king's seal; and he was the king's most intimate counsellor, as appears by an old law cited by Sir James Balfour: "The

chancellar

Chancellor. chancellar ſal at al tymes aſſiſt the king, in giving him counſall mhir ſecretly nor the reſt of the nobility, to quais ordinances all officiaris, als well of the realme as of the kingis hous, ſould anſwer and obey. The chancellar ſall be ludgit neir unto the kingis grace, for keiping of his bodie, and the ſeill; and that he may be readie baith day and nicht at the kingis command." By having the cuſtody of the great ſeal, he had an opportunity of examining the king's grants, and other deeds which were to paſs under it, and to cancel them if they appeared againſt law, and were obtained ſurreptitiouſly or by falſe ſuggeſtions.

King James VI. ordained the chancellor to have the firſt place and rank in the nation, *ratione officii*; by virtue whereof he preſided in the parliament, and in all courts of judicature. After the reſtoration of King Charles II. by a particular declaratory law, parliament firſt, the lord chancellor was declared, by virtue and right of his office, preſident, in all the meetings of parliament, or other public judicatures of the kingdom. Although this act was made to declare the chancellor preſident of the exchequer as well as other courts, yet in 1663 the king declared the treaſurer to be preſident of that court.

The office of lord chancellor was aboliſhed by the Union, there being no farther uſe for the judicial part of this office; and to anſwer all the other parts of the chancellor's office, a lord keeper of the great ſeal was erected, with a ſalary of 3000l. a-year.

Chancellor of a cathedral, an officer that hears leſſons and lectures read in the church, either by himſelf or his vicar; to correct and ſet right the reader when he reads amiſs; to inſpect ſchools; to hear cauſes; apply the ſeal; write and deſpatch the letters of the chapter; keep the books; take care that there be frequent preachings, both in the church and out of it; and aſſign the office of preaching to whom he pleaſes.

Chancellor of the Duchy of Lancaſter, an officer appointed chiefly to determine controverſies between the king and his tenants of the duchy land, and otherwiſe to direct all the king's affairs belonging to that court. See *Duchy Court*.

Chancellor of the Exchequer, an officer who preſides in that court, and takes care of the intereſt of the crown. He is always in commiſſion with the lord-treaſurer, for the letting of crown lands, &c. and has power with others, to compound for forfeitures of lands upon penal ſtatutes. He has alſo great authority in managing the royal revenues, and in matters relating to the firſt fruits.

Chancellor of the order of the Garter, and other Military Orders, is an officer who ſeals the commiſſions and mandates of the chapter and aſſembly of the knights, keeps the regiſter of their proceedings, and delivers acts thereof under the ſeal of their order.

Chancellor of an Univerſity, is he who ſeals the diplomas, or letters of degrees, proviſion, &c. given in the univerſity.

The chancellor of Oxford is uſually one of the prime nobility, choſen by the ſtudents themſelves in convocation. He is their chief magiſtrate; his office is, *durante vita*, to govern the univerſity, preſerve and defend its rights and privileges, convoke aſſemblies, and do juſtice among the members under this juriſdiction. Chancellor's Court in Chancery

Under the chancellor is the vice chancellor, who is choſen annually, being nominated by the chancellor, and elected by the univerſity in convocation. He is always the head of ſome college, and in holy orders. His proper office is to execute the chancellor's power, to govern the univerſity according to her ſtatutes, to ſee that officers and ſtudents do their duty, that courts be duly called, &c. When he enters upon his office, he chooſes four pro-vice chancellors out of the heads of the colleges, to execute his power in his abſence.

The chancellor of Cambridge is alſo uſually one of the prime nobility, and in moſt reſpects the ſame as that in Oxford; only he does not hold his office *durante vita*, but may be elected every three years. Under the chancellor there is a commiſſary, who holds a court of record for all privileged perſons and ſcholars under the degree of maſter of arts, where all cauſes are tried and determined by the civil and ſtatute law, and by the cuſtom of the univerſity.

The vice chancellor of Cambridge is choſen annually by the ſenate, out of two perſons nominated by the heads of the ſeveral colleges and halls.

Chancellor's Court. See *University Courts*.

CHANCERON, in *Natural Hiſtory*, a name given by the French writers to the ſmall caterpillar, that eats the corn, and does vaſt miſchief in their granaries. See the article *Corn-Butterfly*.

CHANCERY, the higheſt court of juſtice in Britain next to the parliament, and of very ancient inſtitution. It has its name chancery (*cancellaria*) from the judge who preſides here, the lord chancellor, or *cancellarius*; who according to Sir Edward Coke, is ſo termed, *à cancellando*, from cancelling the king's letters patent when granted contrary to law, which is the higheſt point of his juriſdiction. In chancery there are two diſtinct tribunals: the one ordinary, being a court of common law; the other extraordinary, being a court of equity.

1. The *ordinary* legal court holds pleas of recognizances acknowledged in the chancery, writs of *ſcire facias*, for repeal of letters patent, writs of partition, &c. and alſo of all perſonal actions by or againſt any officer of the court. Sometimes a *ſuperſedeas*, or writ of privilege, hath been here granted to diſcharge a perſon out of priſon: one from hence may have a *habeas corpus* prohibition, &c. in the vacation; and here a *ſubpœna* may be had to force witneſſes to appear in other courts, when they have no power to call them. But, in proſecuting cauſes, if the parties deſcend to iſſue, this court cannot try it by jury; but the lord-chancellor delivers the record into the king's bench to be tried there; and after trial had, it is to be remanded into the chancery, and there judgment given; though if there be a demurer in law, it ſhall be argued in this court. *Blackſt. Comment.*

In this court is alſo kept the *officina juſtitiæ*; out of which all original writs that paſs under the great ſeal, all commiſſions of charitable uſes, ſewers, bankruptcy, idiocy, lunacy, and the like, do iſſue; and for which it is always open to the ſubject, who may there at any time demand and have, *ex debito juſtitiæ*, any writ that his occaſions may call for. Theſe writs, relating to the buſineſs

Chancellor. buſineſs of the ſubject, and the returns of them, were, according to the ſimplicity of ancient times, originally kept in a hamper, *in hanaperio;* and the others (relating to ſuch matters wherein the crown is mediately or immediately concerned) were preſerved in a little ſack or bag, *in parva baga;* and hence hath ariſen the diſtinction of the *hanaper* office, and the *petty-bag* office, which both belong to the common law court in chancery.

2. The *extraordinary* court, or court of equity, proceeds by the rules of equity and conſcience, and moderates the rigour of the common law, conſidering the *intention* rather than the *words* of the law. It gives relief for and againſt infants notwithſtanding their minority, and for or againſt married women notwithſtanding their coverture. All frauds and deceits for which there is no redreſs at common law; all breaches of truſt and confidence; and accidents, as to relieve obligors, mortgagers, &c. againſt penalties and forfeitures, where the intent was to pay the debt, are here remedied: for in chancery, a forfeiture, &c. ſhall not bind, where a thing may be done after, or compenſation made for it. Alſo this court will give relief againſt the extremity of unreaſonable engagements entered into without conſideration; oblige creditors that are unreaſonable to compound with an unfortunate debtor; and make executors, &c. give ſecurity and pay intereſt for money that is to lie long in their hands. This court may confirm title to lands, though one hath loſt his writings; and render conveyances defective through miſtake, &c. good and perfect. In chancery, copy-holders may be relieved againſt the ill uſage of their lords; encloſures of lands that are common be decreed; and this court may decree money or lands given to charitable uſes, oblige men to account with each other, &c. But in all caſes where the plaintiff can have his remedy at law, he ought not to be relieved in chancery; and a thing which may be tried by a jury is not triable in this court.

The proceedings in chancery are, firſt to file the bill of complaint, ſigned by ſome counſel, ſetting forth the fraud or injury done, or wrong ſuſtained, and praying relief: after the bill is filed, proceſs of *ſubpœna* iſſues to compel the defendant to appear; and when the defendant appears, he puts in his anſwer to the bill of complaint, if there be no cauſe for the plea to the juriſdiction of the court, in diſability of the perſon, or in bar, &c. Then the plaintiff brings his replication, unleſs he files exceptions againſt the anſwer as inſufficient, referring it to a maſter to report whether it be ſufficient or not; to which report exceptions may alſo be made. The anſwer, replication, rejoinder, &c. being ſettled, and the parties come to iſſue, witneſſes are to be examined upon interrogatories, either in court or by commiſſion in the country, wherein the parties uſually join; and when the plaintiff and defendant have examined their witneſſes, publication is to be made of the depoſitions, and the cauſe is to be ſet down for hearing; after which follows the decree. But it is now uſual to appeal to the houſe of lords; which appeals are to be ſigned by two noted counſel, and exhibited by way of petition; the petition or appeal is lodged with the clerk of the houſe of lords, and read in the houſe, whereon the appellee is ordered to put in his anſwer, and a day fixed for hearing the cauſe: and after counſel heard, and evidence given on both ſides, the lords will affirm or reverſe the decree of the chancery, and finally determine the cauſe by a majority of votes, &c. Chandelier || Chandler.

CHANDELIER, in fortification, a kind of moveable parapet, conſiſting of a wooden frame, made of two upright ſtakes, about ſix feet high, with croſs planks between them; ſerving to ſupport faſcines to cover the pioneers.

CHANDERNAGORE, a French ſettlement in the kingdom of Bengal in the Eaſt Indies. It lies on the river Ganges, two leagues and a half above Calcutta. The diſtrict is hardly a league in circumference, and has the diſadvantage of being ſomewhat expoſed on the weſtern ſide; but its harbour is excellent, and the air is as pure as it can be on the banks of the Ganges. Whenever any building is undertaken that requires ſtrength, it muſt here, as well as in all other parts of Bengal, be built upon piles, it being impoſſible to dig three or four feet without coming at water.

CHANDLER, Mary, diſtinguiſhed by her talent for poetry, was the daughter of a diſſenting miniſter at Bath, and was born at Malmſbury in Wiltſhire in 1687. She was bred a milliner; but from her childhood had a turn for poetry, and in her riper years applied herſelf to the ſtudy of the poets. Her poems for which ſhe was complimented by Mr Pope, breathe the ſpirit of piety and philoſophy. She had the misfortune to be deformed, which determined her to live ſingle; though ſhe had great ſweetneſs of countenance, and was ſolicited to marry. She died in 1745, aged 58.

Chandler, *Dr Samuel*, a learned and reſpectable diſſenting miniſter, deſcended from anceſtors who had heartily engaged in the cauſe of religious liberty, and ſuffered for the ſake of conſcience and nonconformity; was born at Hungerford in Berks, where his father was a miniſter of conſiderable worth and abilities. Being by his literary turn deſtined to the miniſtry, he was firſt placed at an academy at Bridgewater, and from thence removed to Glouceſter under Mr Samuel Jones. Among the pupils of Mr Jones were Mr Joſeph Butler, afterwards biſhop of Durham, and Mr Thomas Secker, afterwards archbiſhop of Canterbury. With theſe eminent perſons he contracted a friendſhip that continued to the end of their lives, notwithſtanding the different views by which their conduct was afterwards directed, and the different ſituations in which they were placed.

Mr Chandler having finiſhed his academical ſtudies, began to preach about July 1714; and being ſoon diſtinguiſhed by his talents in the pulpit, he was choſen in 1716 miniſter of the Preſbyterian congregation at Peckham near London, in which ſtation he continued ſome years. Here he entered into the matrimonial ſtate, and began to have an increaſing family, when, by the fatal South ſea ſcheme of 1720, he unfortunately loſt the whole fortune which he had received with his wife. His circumſtances being thereby embarraſſed, and his income as a miniſter being inadequate to his expences, he engaged in the trade of a bookſeller, and kept a ſhop in the Poultry, London, for about two or three years, ſtill continuing to diſcharge the duties of the paſtoral office. He alſo officiated as joint preacher with the learned Dr Lardner of a winter weekly evening lecture at the meeting houſe in the Old Jewry, London: in which meeting he was eſtabliſhed aſſiſtant preacher

about

Chandler. about the year 1725, and then as the paſtor. Here he adminiſtered to the religious improvement of a very reſpectable congregation for 40 years with the greateſt applauſe; and with what diligence and application he improved the vacancies of time from his paſtoral duties, for improving himſelf and benefiting the world, will appear from his many writings on a variety of important ſubjects. While he was thus laudably employed, not only the univerſities of Edinburgh and Aberdeen gave him, without any application, teſtimonies of their eſteem in diplomas, conferring on him the degree of D. D. but he alſo received offers of preferment from ſome of the governors of the eſtabliſhed church, which he nobly declined. He had likewiſe the honour of being afterwards elected F. R. and A. SS.

On the death of George II. in 1760, Dr Chandler publiſhed a ſermon on that event, in which he compared that prince to King David. This gave riſe to a pamphlet, which was printed in the year 1761, entitled "The Hiſtory of the Man after God's own Heart;" wherein the author ventured to exhibit King David as an example of perfidy, luſt, and cruelty, fit only to be ranked with a Nero or a Caligula; and complained of the inſult that had been offered to the memory of the late Britiſh monarch by Dr Chandler's parallel between him and the king of Iſrael. This attack occaſioned Dr Chandler to publiſh in the following year "A Review of the Hiſtory of the Man after God's own Heart; in which the Falſehoods and Miſrepreſentations of the Hiſtorian are expoſed and corrected." He alſo prepared for the preſs a more elaborate work, which was afterwards publiſhed in two volumes 8vo, under the following title: "A Critical Hiſtory of the Life of David; in which the principal Events are ranged in Order of time; the chief Objections of Mr Bayle and others againſt the Character of this Prince, the Scripture Account of him, and the Occurrences of his Reign, are examined and refuted; and the Pſalms which refer to him explained." As this was the laſt, it was likewiſe one of the beſt, of Dr Chandler's productions. The greateſt part of this work was printed off at the time of our author's death, which happened May 8. 1766, aged 73. During the laſt year of his life, he was viſited with frequent returns of a very painful diſorder, which he endured with great reſignation and Chriſtian fortitude. He was interred in the burying-ground at Bunhill-fields on the 16th of the month; and his funeral was very honourably attended by miniſters and other gentlemen. He expreſsly deſired, by his laſt will, that no delineation of his character might be given in his funeral ſermon, which was preached by Dr Amory. He had ſeveral children; two ſons and a daughter who died before him, and three daughters who ſurvived him; two of whom are yet living, and both married, one of them to the Rev. Dr Harwood.

Dr Chandler was a man of very extenſive learning and eminent abilities; his apprehenſion was quick and his judgment penetrating; he had a warm and vigorous imagination; he was a very inſtructive and animated preacher; and his talents in the pulpit and as a writer procured him very great and general eſteem, not only among the diſſenters, but among large numbers of the eſtabliſhed church. He was principally inſtrumental in the eſtabliſhment of the fund for relieving the widows and orphans of poor Proteſtant diſſenting miniſters: the plan of it was firſt formed by him; and it was by his intereſt and application to his friends that many of the ſubſcriptions for its ſupport were procured. Chang-tong.

In 1768, four volumes of our author's ſermons were publiſhed by Dr Amory, according to his own directions in his laſt will; to which were prefixed a neat engraving of him, from an excellent portrait by Mr Chamberlin. He alſo expreſſed a deſire to have ſome of his principal pieces reprinted in four volumes 8vo: propoſals were accordingly publiſhed for that purpoſe, but did not meet with ſufficient encouragement. But in 1777, another work of our author was publiſhed in one volume 4to, under the following title: "A Paraphraſe and Notes on the Epiſtles of St Paul to the Galatians and Epheſians, with doctrinal and practical Obſervations: together with a critical and practical Commentary on the two Epiſtles of St Paul to the Theſſalonians." Dr Chandler alſo left, in his interleaved Bible, a large number of critical notes, chiefly in Latin, which are now the property of Dr Kippis, Mr Farmer, Dr Price, and Dr Savage, and which have been intended to be publiſhed; but the deſign has not yet been executed. A complete liſt of Dr Chandler's works is given in the Biographia Britannica, vol. iii. p. 435.

CHANG-TONG, a province of China, bounded on the eaſt by Petcheli and part of Honan, on the ſouth by Kiang-nan, on the eaſt by the ſea, and on the north by the ſea and part of Petcheli. The country is well watered by lakes, ſtreams, and rivers; but is nevertheleſs liable to ſuffer from drought, as rain falls here but ſeldom. The locuſts alſo ſometimes make great devaſtation. However, it abounds greatly in game; and there is perhaps no country where quails, partridges, and pheaſants, are ſold cheaper, the inhabitants of this province being reckoned the keeneſt ſportſmen in the empire. The province is greatly enriched by the river Yun, called the *Grand Imperial Canal*, through which all the barks bound to Pekin muſt paſs in their way thither. The duties on this canal alone amount to more than 450,000l. annually. The canal itſelf is greatly admired by European travellers on account of its ſtrong and long dikes, the banks decorated with cut ſtone, the ingenious mechaniſm of its locks, and the great number of natural obſtacles which have been overcome in the execution of the work.—The province produces ſilk of the ordinary kind; and beſides this, another from a ſort of inſect reſembling our caterpillar. It is coarſer than the ordinary ſilk, but much ſtronger and more durable; ſo that the ſtuffs made from it have a very extenſive ſale throughout the empire.

Chang-tong is remarkable for being the birthplace of the celebrated philoſopher and lawgiver Confucius. His native city is called *Kio-ſeou*, where there are ſeveral monuments erected in honour of this great man. The province is divided into ſix diſtricts, which contain ſix cities of the firſt claſs, and 114 of the ſecond and third. Along the coaſt, alſo, are 15 or 16 villages of conſiderable importance on account of their commerce; there is likewiſe a number of ſmall iſlands, moſt of which have harbours very convenient for the Chineſe junks which paſs from thence to Corea or Leatong. The moſt remarkable cities are, 1. Tſi-nan-fou, the

Chang-tong || Changes.

the capital, which ſtands ſouth of the river Tſing-ho or Tſi. It is large and populous; but chiefly celebrated for having been the reſidence of a long ſeries of kings, whoſe tombs, riſing on the neighbouring mountains, afford a beautiful proſpect. 2. Yen-tcheu-fou, the ſecond city of the province, ſituated between two rivers, and in a mild and temperate climate. Great quantities of gold are ſaid to have been formerly collected in its neighbourhood. 3. Lin-tçin-tcheu, ſituated on the great canal, is much frequented by ſhips, and may be called a general magazine for every kind of merchandiſe. Here is an octagonal tower, divided into eight ſtories, the walls of which are covered on the outſide with porcelain loaded with various figures neatly executed, and incruſted on the inſide with variouſly coloured marble. A ſtaircaſe, conſtructed in the wall, conducts to all the ſtories, from which there are paſſages that lead into magnificent galleries ornamented with gilt balluſtrades. All the cornices and projections of the tower are furniſhed with little bells; which, ſays M. Groſier, when agitated by the wind, form a very agreeable harmony. In the higheſt ſtory is an idol of gilt copper, to which the tower is dedicated. In the neighbourhood are ſome other temples, the architecture of which is exceedingly beautiful.

CHANGER, an officer belonging to the king's mint, who changes money for gold or ſilver bullion. See MINT.

Money-CHANGER, is a banker, who deals in the exchange, receipt, and payment, of moneys. See BANKER.

CHANGES, in *Arithmetic*, &c. the permutations or variations of any number of quantities; with regard to their poſition, order, &c. See COMBINATION.

To find all the poſſible CHANGES of any number of Quantities, or how oft their Order may be varied.] Suppoſe two quantities *a* and *b*. Since they may be either wrote *a b* or *b a*, it is evident their *changes* are 2=2.1. Suppoſe three quantities *a b c*: their *changes* will be as in the margin; as is evident by combining *c* firſt with *a b*, then with *b a;* and hence the number of *changes* ariſes 3. 2. 1=6. If the quantities be 4, each may be combined four ways with each order of the other three; whence the number of changes ariſes 6. 4.=4. 3. 2. 1.=24. Wherefore, if the number of quantities be ſuppoſed *n*, the number of *changes* will be *n.n*—1.*n*—2.*n*—3.*n*—4. &c. If the ſame quantity occur twice, the *changes* of two will be found *b b;* of three, *b a b*, *a b b*, *b b c;* of four, *c b a b*, *b c a b*, *b a b c*. And thus the number of *changes* in the firſt caſe will be 1=(2. 1): 2. 1; in the ſecond, 3=(3. 2. 1): 2. 1: in the third, 12=(4. 3. 2. 1): 2. 1.

c a b
a c b
a b c
——
c b a
b c a
b a c

If a fifth letter be added, in each ſeries of four quantities, it will beget five *changes*, whence the number of all the *changes* will be 60=(5. 4. 3. 2.) 1,: 2. 1. Hence if the number of quantities be *n*, the number of *changes* will be (*n.n*—1.*n*—2.*n*—3 *n*—4. &c.): 2. 1. From theſe ſpecial formulæ may be collected a general one, viz. if *n* be the number of quantities, and *m* the number which ſhows how oft the ſame quantity occurs; we ſhall have (*n.n*—1.*n*—2.*n*=3.*n*—4.*n*—5.*n*—6. *n*—7.*n*—8.*n*—9. &c.): (*m*—1.*m*—2.*m*—3.*m*—4. &c.) the ſeries being to be continued, till the continual ſubtraction of unity from *n* and *m* leave 0. After the ſame manner we may proceed further, till putting *n* for the number of quantities, and *l*, *m*, *r*, &c. for the number that ſhows how oft any of them is repeated, we arrive at an univerſal form. (*n.n*—1.*n*—2.*n*—3. *n*—4.*n*—5.*n*—6.*n*—7.*n*—8. &c.): (*l.l.*—1.*l*—2.*l*—3. *l*—4.*l*—5. &c. *m.m*—1.*m*—2.*m*—3. &c. *r.r*—1.*r*—2. *r*—3.*r*—4.*r*—5. &c.) Changes || Chan-ſi.

Suppoſe, for inſtance, *n*=6, *l*=3, *r*=0. The number of *changes* will be (6. 5. 4. 3. 2. 1.): (3. 2. 1. 3. 2. 1.) =(6. 5. 4.): (3. 2=2. 5. 2=20).

Hence, ſuppoſe thirteen perſons at a table, if it be required how oft they may *change* places; we ſhall find the number 13. 12. 11. 10. 9. 8. 7. 6. 5. 4. 3. 2. 1. =6227020800.

In this manner may all the poſſible anagrams of any word be found in all languages, and that without any ſtudy: ſuppoſe, v. g. it were required to find the anagrams of the word *amor*, the number of *changes* will be

a	*oam*	*rmoa*	*maro*	*arom*
——	*aom*	*mroa*	*maor*	*aorm*
ma	*amo*	*mora*	——	*aomr*
am	——	*moar*	*raom*	——
——	*roma*	——	*oram*	*ramo*
oma	*orma*	*rmao*	*oarm*	*armo*
moa	*omra*	*mrao*	*oamr*	*amro*
mao	*omar*		——	*amor*
			raom	

The anagrams therefore of the word *amor*, in the Latin tongue, are *roma*, *mora*, *maro*, *ramo*, *armo*. See ANAGRAM.

Whether this new method of anagramatizing be like to prove of much ſervice to that art, is left to the poets.

CHANNA, in *Zoology*, the name of a fiſh caught in great plenty in the Mediterranean, and brought to market in Italy and elſewhere, among the ſea perch, which it ſo nearly reſembles, that it would not be diſtinguiſhable from it, but that the ſea perch is bigger, and has only broad tranſverſe lines on its back, whereas the channa has them both tranſverſe and longitudinal. It has a very wide mouth, and its lower jaw is longer than its upper; ſo that its mouth naturally falls open. Its eyes are ſmall, and its teeth very ſharp: its back is of a blackiſh red: it has ſeveral longitudinal lines of a reddiſh hue; and its tail is marked with reddiſh ſpots. There is an obſervation, that in all the fiſh of this kind which have been examined by naturaliſts, there have been found none but females. This is as old as the days of Ariſtotle. Whether this be true in fact, would require many obſervations. If it ſhould prove ſo, the whole ſeems to end in this, that the channa is no diſtinct ſpecies, but only the female of ſome other fiſh. There is another fiſh not unlike this, called *cannadella*, or rather *channadella*, which at Marſeilles is known by the name of *charina*.

CHANNEL, in *Geography*, an arm of the ſea, or a narrow ſea between two continents; or between a continent and an iſland. Such are the Britiſh channel, St George's channel, the channel of Conſtantinople, &c.

CHANNEL of a ſhip. See *CHAIN-Wales*.

CHAN-ſi, a province of China, and one of the ſmalleſt in the empire, is bounded on the eaſt by Petcheli, on the ſouth by Honan, on the weſt by Chen-ſi, and on the north by the great wall. The climate is healthful

Chan-ſi, Chant.

healthful and agreeable, and the ſoil generally fertile, though the country is full of mountains. Some of theſe laſt are rough, wild, and uninhabited; but others are cultivated with the greateſt care from top to bottom, and cut into terraces, forming a very agreeable proſpect; while ſome have on their tops vaſt plains no leſs fertile than the richeſt low lands. Theſe mountains abound with coal, which the inhabitants pound and make into cakes with water; a kind of fuel which, though not very inflammable, affords a ſtrong and laſting fire when once kindled. It is principally uſed for heating their ſtoves, which are conſtructed with brick as in Germany; but the inhabitants of this province give them the form of ſmall beds, and ſleep upon them. The beſt grapes to be met with in this part of Aſia grow in the province of Chan-ſi; ſo that good wine might be made, but the people chooſe rather to dry and ſell them to the neighbouring provinces. The country abounds with muſk, porphyry, marble, lapis lazuli, and jaſper of various colours; and iron mines, as well as ſalt pits and cryſtal, are very common. Here are five cities of the firſt claſs, and eighty-five of the ſecond and third: the moſt remarkable are, 1. Tai-youen-fou the capital, an ancient city about three leagues in circumference, but much decayed in conſequence of being no longer the reſidence of the princes of the blood as it was formerly. Nothing now remains of the palaces of thoſe princes but a few ruins; but their tombs are ſtill to be ſeen on a neighbouring mountain. The burying place is magnificently ornamented; and all the tombs are of marble or cut ſtone, having near them triumphal arches, ſtatues of heroes, figures of lions and different animals, eſpecially horſes, and which are diſpoſed in very elegant order. An awful and melancholy gloom is preſerved around theſe tombs by groves of aged cypreſſes which have never felt the ſtroke of an axe, placed chequer-wiſe. The principal articles of trade here are, hardware, ſtuffs of different kinds, particularly carpets in imitation of thoſe of Turkey. 2. Ngan-y is ſituated near a lake as ſalt as the ocean, from which a great quantity of ſalt is extracted. 3. Fuen-tcheou-fou, an ancient and commercial city built on the banks of the river Fuen-ho: it has baths and ſprings almoſt boiling hot, which, by drawing hither a great number of ſtrangers, add greatly to its opulence. 4. Tai-tong-fou, ſituated near the wall, is a place of great ſtrength, and important by reaſon of its ſituation, as being the only one expoſed to the incurſions of the Tartars. Its territories abound with lapis lazuli, medicinal herbs, and a particular kind of jaſper called *yieche*, which is as white and beautiful as agate; marble and porphyry are alſo common; and a great revenue is produced from the ſkins which are dreſſed here.

CHANT, (*cantus*), is uſed for the vocal muſic of churches.

In church hiſtory we meet with divers kinds of *chant* or *ſong*. The firſt is the *Ambroſian*, eſtabliſhed by St Ambroſe. The ſecond, the *Gregorian chant*, introduced by Pope Gregory the Great, who eſtabliſhed ſchools of chantors, and corrected the church-ſong. This is ſtill retained in the church under the name of *plain ſong*: at firſt it was called the *Roman ſong*. The *plain* or *Gregorian chant*, is where the choir and people ſing in uniſon, or all together in the ſame manner.

CHANTILLY, a village in France, about ſeven leagues from Paris, where there is a magnificent palace and fine foreſt formerly belonging to the duke of Bourbon. Chantilly ‖ Chaos.

CHANTOR, a ſinger of a choir in a cathedral. The word is almoſt grown obſolete, *choriſter* or *ſinging-man* being commonly uſed inſtead of it. All great chapters have chantors and chaplains to aſſiſt the canons, and officiate in their abſence.

CHANTOR is uſed by way of excellence for the precentor or maſter of the choir, which is one of the firſt dignities of the chapter. At St David's in Wales, where there is no dean, he is next in dignity to the biſhop. The ancients called the chantor *primicerius cantorum*. To him belonged the direction of the deacons and other inferior officers.

Chantors, in the temple of Jeruſalem, were a number of Levites employed in ſinging the praiſes of God, and playing upon inſtruments before his altar. They had no habits diſtinct from the reſt of the people; yet in the ceremony of removing the ark to Solomon's temple, the chantors appeared dreſſed in tunics of byſſus or fine linen. 2. Chron. v. 12.

CHANTRY, or CHAUNTRY, was anciently a church or chapel endowed with lands, or other yearly revenue, for the maintenance of one or more prieſts, daily ſaying or ſinging maſs for the ſouls of the donors, and ſuch others as they appointed. Hence *chauntry-rents* are rents paid to the crown by the tenants or purchaſers of *chauntry-lands*.

CHAOLOGY, the hiſtory or deſcription of the chaos. See CHAOS.

Orpheus, in his chaology, ſets forth the different alterations, ſecretions, and diverſe forms, which matter went through till it became inhabitable, which amounts to the ſame with what we otherwiſe call *coſmogony*. Dr Burnet, in his theory of the earth, repreſents the chaos as it was at firſt, entire, undivided, and univerſally rude and deformed; or the *tohu bohu*: then ſhows how it came to be divided into its reſpective regions; how the homogeneous matter gathered itſelf apart from all of a contrary principle; and laſtly, how it hardened and became a ſolid habitable globe. See EARTH.

CHAOS, that confuſion in which matter lay when newly produced out of nothing at the beginning of the world, before God, by his almighty word, had put it into the order and condition wherein it was after the ſix days creation. See EARTH.

Chaos is repreſented by the ancients as the firſt principle, ovum, or ſeed of nature and the world. All the ſophiſts, ſages, naturaliſts, philoſophers, theologues, and poets, held that chaos was the eldeſt and firſt principle, το αρχαιον χαος. The Barbarians, Phœnicians, Egyptians, Perſians, &c. all refer the origin of the world to a rude, mixed, confuſed maſs of matter. The Greeks, Orpheus, Heſiod, Menander, Ariſtophanes, Euripides, and the writers of the Cyclic Poems, all ſpeak of the firſt chaos; the Ionic and Platonic philoſophers build the world out of it. The Stoics hold, that as the world was firſt made of a chaos, it ſhall at laſt be reduced to a chaos; and that its periods and revolutions in the mean time are only tranſitions from one chaos to another. Laſtly, The Latins, as Ennius, Varro, Ovid, Lucretius, Statius, &c. are all of the

Chaos || Chapel.

same opinion. Nor is there any sect or nation whatever that does not derive their διακοσμησις, *the structure of the world*, from a chaos.

The opinion first arose among the Barbarians, whence it spread to the Greeks, and from the Greeks to the Romans and other nations. Dr Burnet observes, that besides Aristotle and a few other Pseudo-Pythagoreans, nobody ever asserted that our world was always from eternity of the same nature, form, and structure, as at present; but that it had been the standing opinion of the wise men of all ages, that what we now call the *terrestrial globe*, was originally an unformed, indigested mass of heterogeneous matter, called *chaos;* and no more than the rudiments and materials of the present world.

It does not appear who first broached the notion of a chaos. Moses, the eldest of all writers, derives the origin of this world from a confusion of matter, dark, void, deep, without form, which he calls *tohu bohu;* which is precisely the chaos of the Greek and Barbarian philosophers. Moses goes no further than the chaos, nor tells us whence it took its origin, or whence its confused state; and where Moses stops, there precisely do all the rest. Dr Burnet endeavours to show that as the ancient philosophers, &c. who wrote of the cosmogony, acknowledged a chaos for the principle of their world; so the divines, or writers of the theogony, derive the origin or generation of their fabled gods from the same principle.

Mr Whiston supposed the ancient chaos, the origin of our earth, to have been the atmosphere of a comet; which, though new, yet, all things considered, is not the most improbable assertion. He endeavours to make it out by many arguments, drawn from the agreement which appears to be between them. So that, according to him, every planet is a comet, formed into a regular and lasting constitution, and placed at a proper distance from the sun, revolving in a nearly circular orbit: and a comet is a planet either beginning to be destroyed or re-made; that is, a chaos or planet unformed or in its primeval state, and placed as yet in an orbit very eccentrical.

Chaos, in the phrase of Paracelsus, imports the air. It has also some other significations amongst the alchemists.

Chaos, in *Zoology*, a genus of insects belonging to the order of vermes zoophyta. The body has no shell or covering, and is capable of reviving after being dead to appearance for a long time: it has no joints or external organs of sensation. There are five species, mostly obtained by infusions of different vegetables in water, and only discoverable by the microscope. See Animalculæ.

CHAPEAU, in *Heraldry*, an ancient cap of dignity worn by dukes, being scarlet-coloured velvet on the outside, and lined with a fur. It is frequently borne above a helmet instead of a wreath, under gentlemen's crests.

CHAPEL, a place of divine worship, so called. The word is derived from the Latin *capella*. In former times, when the kings of France were engaged in war, they always carried St Martin's hat into the field, which was kept in a tent as a precious relick: from whence the place was called *capella;* and the priests, who had the custody of the tent, *capellani*. Afterwards the word *capella* became applied to private oratories. Chapel || Chapelle.

In Britain there are several sorts of chapels. 1. Parochial chapels: these differ from parish churches only in name; they are generally small, and the inhabitants within the district few. If there be a presentation *ad ecclesiam* instead of *capellam*, and an admission and institution upon it, it is no longer a chapel, but a church. 2. Chapels, which adjoin to, and are part of the church: such were formerly built by honourable persons, as burying places for themselves and their families. 3. Chapels of ease: these are usually built in very large parishes, where all the people cannot conveniently repair to the mother church. 4. Free chapels; such as were founded by kings of England. They are free from all episcopal jurisdiction, and only to be visited by the founder and his successors; which is done by the lord chancellor: yet the king may license any subject to build and endow a chapel, and by letters patent exempt it from the visitation of the ordinary. 5. Chapels in the universities, belonging to particular colleges. 6. Domestic chapels, built by noblemen or gentlemen for the private service of God in their families. See Chaplain.

Chapel is also a name given to a printer's workhouse; because, according to some authors, printing was first actually performed in chapels or churches; or, according to others, because Caxton, an early printer, exercised the art in one of the chapels in Westminster abbey. In this sense they say, *the orders* or *laws of the chapel*, *the secrets of the chapel*, &c.

Knights of the Chapel, called also *Poor knights of Windsor*, were instituted by Henry VIII. in his testament. Their number was at first thirteen, but has been since augmented to 26. They assist in the funeral services of the kings of England: they are subject to the office of the canons of Windsor, and live on pensions assigned them by the order of the Garter. They bear a blue or red cloak, with the arms of St George on the left shoulder.

CHAPELAIN, James, an eminent French poet, born at Paris in 1595, and often mentioned in the works of Balzac, Menage, and other learned men. He wrote several works, and at length distinguished himself by a heroic poem called *La Pucelle, ou France Delivree*, which employed him several years; and which raising the expectation of the public, was as much decried by some as extolled by others. He was one of the king's counsellors; and died in 1647, very rich, but was very covetous and sordid.

CHAPELET, in the manege, a couple of stirrup-leathers, mounted each of them with a stirrup, and joined at top in a sort of leather buckle, called the *head of the chapelet*, by which they are made fast to the pummel of the saddle, after being adjusted to the rider's length and bore. They are used both to avoid the trouble of taking up or letting down the stirrups every time that the gentleman mounts on a different horse and saddle, and to supply the place of the academy saddles, which have no stirrups to them.

CHAPELLE, Claudius Emanuel Luillier, the natural son of Francis Luillier, took the name of *Chapelle* from a village between Paris and St Denys, where he was born. He distinguished himself by writing small pieces of poetry, in which he discovered great delicacy

Chaperon || Chaplain

delicacy, an eaſy turn, and an admirable felicity of expreſſion. He was the friend of Gaſſendi and Moliere; and died in 1686.

CHAPERON, CHAPERONNE, or CHAPEROON, properly ſignifies a ſort of hood or covering for the head, anciently worn both by men and women, the nobles and the populace, and afterwards appropriated to the doctors and licentiates in colleges, &c. Hence the name paſſed to certain little ſhields, and other funeral devices, placed on the foreheads of the horſes that drew the herſes in pompous funerals, and which are ſtill called *chaperoons* or *ſhafferoons*; becauſe ſuch devices were originally faſtened on the *chaperonnes*, or hoods, worn by thoſe horſes with their other coverings of ſtate.

CHAPERON of a bit-mouth, in the manege, is only uſed for ſcatch-mouths, and all others that are not cannon-mouths, ſignifying the end of the bit that joins to the branch juſt by the banquet. In ſcatch-mouths the chaperon is round, but in others it is oval: and the ſame part that in ſcatch and other mouths is called *chaperon*, is in cannon-mouths called *fronçeau*.

CHAPITERS, in *Architecture*, the ſame with CAPITALS.

CHAPITERS, in *Law*, formerly ſignified a ſummary of ſuch matters as were inquired of, or preſented before juſtices in eyre, juſtices of aſſize, or of the peace, in their ſeſſions.

Chapiters, at this time, denotes ſuch articles as are delivered by the mouth of the juſtice in his charge to the inqueſt.

CHAPLAIN properly ſignifies a perſon provided with a chapel, or who diſcharges the duty thereof.

CHAPLAIN is alſo uſed for an eccleſiaſtical perſon, in the houſe of a prince, or a perſon of quality, who officiates in their chapels, &c.

In England there are 48 chaplains to the king, who wait four each month, preach in the chapel, read the ſervice to the family, and to the king in his private oratory, and ſay grace in the abſence of the clerk of the cloſet. While in waiting they have a table and attendance, but no ſalary. In Scotland the king has ſix chaplains, with a ſalary of 50l. each, three of them having in addition the deanery of the chapel royal divided between them, making up above 100l. to each. The only duty at preſent is to ſay prayers at the election of peers for Scotland to ſit in parliament.—According to a ſtatute of Henry VIII. the perſons veſted with a power of retaining chaplains, together with the number each is allowed to qualify, is as follows: An archbiſhop, eight; a duke or biſhop, ſix; marquis or earl, five; viſcount, four; baron, knight of the garter, or lord chancellor, three; a dutcheſs, marchioneſs, counteſs, baroneſs, the treaſurer and comptroller of the king's houſe, clerk of the cloſet, the king's ſecretary, dean of the chapel, almoner, and maſter of the rolls, each of them two; chief juſtice of the king's bench, and warden of the cinque-ports, each one. All theſe chaplains may purchaſe a licenſe or diſpenſation, and take two benefices with cure of ſouls. A chaplain muſt be retained by letters teſtimonial under hand and ſeal; for it is not ſufficient that he ſerve as chaplain in the family.

The firſt chaplains are ſaid to have been thoſe inſtituted by the ancient kings of France, for preſerving the chape, or cape, with the other relicks of St Martin, which the kings kept in their palace, and carried out with them to the war. The firſt chaplain is ſaid to have been Gul. de Meſmes, chaplain to St Louis. Chaplain, Chaplet.

CHAPLAIN in the order of Malta, is uſed for the ſecond rank or claſs in that order; otherwiſe called *diaco*.

The knights make the firſt claſs, and the chaplains the ſecond.

CHAPLAINS of the Pope, are the auditors, or judges of cauſe in the ſacred palace; ſo called, becauſe the pope anciently gave audience in his chapel, for the deciſion of caſes ſent from the ſeveral parts of Chriſtendom. He hither ſummoned as aſſeſſors the moſt learned lawyers of his time; and they hence acquired the appellation of *capellani*, chaplains. It is from the decrees formerly given by theſe that the body of decretals is compoſed: their number Pope Sixtus IV. reduced to twelve.

Some ſay, the ſhrines of relicks were covered with a kind of tent cape, or *capella*, i. e. little cape; and that hence the prieſts, who had the care of them, were called chaplains. In time theſe relicks were repoſited in a little church, either contiguous to a larger or ſeparate from it; and the ſame name, *capella*, which was given to the cover, was alſo given to the place where it was lodged: and hence the prieſt who ſuperintended it came to be called chaplain.

CHAPLET, an ancient ornament for the head, like a garland or wreath: but this word is frequently uſed to ſignify the circle of a crown. There are inſtances of its being borne in a coat of arms, as well as for creſts; the paternal arms for Laſcelles are argent, three chaplets, gules.

CHAPLET alſo denotes a ſtring of beads uſed by the Roman Catholics, to count the number of their prayers. The invention of it is aſcribed to Peter the hermit, who probably learned it of the Turks, as they owe it to the Eaſt Indians.

Chaplets are ſometimes called *pater-noſters*; and are made of coral, of diamonds, of wood, &c. The common chaplet contains 50 ave-marias, and five pater-noſters. There is alſo a chaplet of our Saviour, conſiſting of 33 beads, in honour of his 33 years living on the earth, inſtituted by Father Michael the Camaldulian.

The Orientals have a kind of chaplets which they call *chains*, and which they uſe in their prayers, rehearſing one of the perfections of God on each link or head. The Great Mogul is ſaid to have 18 of theſe chains, all precious ſtones; ſome diamonds, others rubies, pearls, &c. The Turks have likewiſe chaplets, which they bear in the hand, or hang at the girdle: but Father Dandini obſerves, they differ from thoſe uſed by the Romaniſts, in that they are all of the ſame bigneſs, and have not that diſtinction into decades, though they conſiſt of ſix decades, or 60 heads. He adds, that the Muſſelmans run over the chaplet almoſt in an inſtant, the prayers being extremely ſhort, as containing only theſe words, "praiſe to God," or "glory to God," for each bead. Beſides the common chaplet they have likewiſe a larger one conſiſting of 100 beads, where there is ſome diſtinction, as being

Chaplet ‖ Chapter.

being divided by little threads into three parts; on one of which they repeat 30 times *ſoubhan Allah*, i. e. "God is worthy to be praiſed;" on another, *ellamh Allah*, "glory be to God:" and on the third, *Allah echer*, "God is great." Theſe thrice thirty times making only 90; to complete the number 100, they add other prayers for the beginning of the chaplet.—He adds, that the Mahometan chaplet appears to have had its riſe from the *mea beracoth*, or "hundred benedictions," which the Jews are obliged to repeat daily, and which we find in their prayer books; the Jews and Mahometans having this in common, that they ſcarce do any thing without pronouncing ſome laud or benediction.

Menage derives the word *chaplet* from *chapeau*, "hat." The modern Latins call it *chapellina*, the Italians more frequently *corona*.

CHAPLET, or *Chapelet*, in *Architecture*, a little moulding, cut or carved into round beads, pearls, olives, or the like.

CHAPMAN, GEORGE, born in 1557, a man highly eſteemed in his time for his dramatic and poetic works. He wrote 17 plays; tranſlated Homer and ſome other ancient poets; and was thought no mean genius. He died in 1634; and was buried in St Giles's in the Fields, where his friend Inigo Jones erected a monument to him.

CHAPPE, in *Heraldry*, the dividing an eſcutcheon by lines drawn from the centre of the upper edge to the angles below, into three parts, the ſections on the ſides being of different metal or colour from the reſt.

CHAPPEL *in* FRITH, a market town of Derbyſhire, about 26 miles north-weſt of Derby. W. Long. 1. 50. N. Lat. 53. 22.

CHAPPEL, *William*, a learned and pious biſhop of Cork, Cloyne, and Roſs in Ireland, born in Nottinghamſhire in 1582. When the troubles began under Charles I. he was proſecuted by the puritan party in parliament, and retired to Derby, where he devoted himſelf to ſtudy till his death in 1649. He wrote *Methodus Concionandi*, i. e. "the Method of Preaching:" and he is one of thoſe to whom the *Whole Duty of Man* has been attributed. He left behind him alſo his own life written by himſelf in Latin, which has been twice printed.

CHAPTER, in eccleſiaſtical polity, a ſociety or community of clergymen belonging to the cathedrals and collegiate churches.

It was in the eighth century that the body of canons began to be called a chapter. The chapter of the canons of a cathedral were a ſtanding council to the biſhop, and, during the vacancy of the ſee, had the juriſdiction of the dioceſe. In the earlier ages, the biſhop was head of the chapter; afterwards abbots and other dignitaries, as deans, provoſts, treaſurers, &c. were preferred to this diſtinction. The deans and chapters had the privilege of chooſing the biſhops in England; but Henry VIII. got this power veſted in the crown: and as the ſame prince expelled the monks from the cathedrals, and placed ſecular canons in their room, thoſe he thus regulated were called deans and chapters of the new foundation; ſuch are Canterbury, Wincheſter, Ely, Carliſle, &c. See DEAN.

CHAPTER, in matters in literature, a diviſion in a book for keeping the ſubject treated of more clear and diſtinct.

Char ‖ Characters.

CHAR, in *Ichthyology*, a ſpecies of SALMO.

CHARA. See BOTANY *Index*.

CHARABON, a ſea port town on the northern coaſt of the iſland of Java in the Eaſt Indies. E. Long. 10. 8. S. Lat. 6.

CHARACENE, the moſt ſouthern part of Suſiana, a province of Perſia, lying on the Perſian gulf, between the Tigris and the Eulæus. It was ſo named from the city of Chorax, called firſt Alexandria, from its founder Alexander the Great; afterwards Antiochia, from Antiochus V. king of Syria, who repaired and beautified it; and laſtly, Chorax Spaſinæ, or Paſinæ, that is, the Mole of the Spaſines, an Arabian king of that name having ſecured it againſt the overflowing of the Tigris, by a high bank or mole, extending three miles, which ſerved as a fence to all that country. Dionyſius Periegetes, and Iſidorus, author of the Parthicæ Manſiones, were both natives of this city. The ſmall diſtrict of Characene was ſeized by Paſines, the ſon of Sogdonacus, king of the neighbouring Arabs, during the troubles of Syria, and erected into a kingdom. Lucian calls him Hyſpaſines, and adds, that he ruled over the Characeni and the neighbouring people: he died in the 85th year of his age. The other kings of this country we find mentioned by the ancients are, Teræus, who died in the 92d year of his age, and after him Artabazus the ſeventh, as Lucian informs us, who was driven from the throne by his own ſubjects, but reſtored by the Parthians. And this is all we find in the ancients relating to the kings of Characene.

CHARACTER, in a general ſenſe, ſignifies a mark or figure, drawn on paper, metal, ſtone, or other matter, with a pen, graver, chiſſel, or other inſtrument, to ſignify or denote any thing. The word is Greek, χαρακτης, formed from the verb, χαρασσω, *inſculpere*, "to engrave, impreſs," &c.

The various kinds of characters may be reduced to three heads, viz. *Literal Characters*, *Numeral Characters*, and *Abbreviations*.

I. *Literal* CHARACTER, is a letter of the alphabet, ſerving to indicate ſome articulate ſound, expreſſive of ſome idea or conception of the mind. See ALPHABET.

1. Theſe may be divided, with regard to their nature and uſe, into *Nominal Characters*, or thoſe we properly call *letters;* which ſerve to expreſs the names of things: See LETTER. *Real Characters;* thoſe that inſtead of names expreſs things and ideas: See IDEA, &c. *Emblematical* or *Symbolical Characters:* which have this in common with real ones, that they expreſs the things themſelves; but have thus further, that they in ſome meaſure perſonate them, and exhibit their form: ſuch are the hieroglyphics of the ancient Egyptians. See HIEROGLYPHIC, SYMBOL, &c.

2. *Literal* CHARACTERS may be again divided, with regard to their invention and uſe, into *particular* and *general* or *univerſal*.

Particular CHARACTERS, are thoſe peculiar to this or that nation. Such are the Roman, Italic, Greek, Hebrew, Arabic, Gothic, Chineſe, &c. *characters.*—See HEBREW, GOTHIC, CHINESE, &c.

Univerſal

Characters. *Universal* CHARACTERS, are also *real characters*, and make what some authors call a *Philosophical Language.*

That diversity of *characters* used by the several nations to express the same idea, is found the chief obstacle to the advancement of learning: to remove this, several authors have taken occasion to propose plans of *characters* that should be universal, and which each people should read in their own language. The *character* here is to be real, not nominal: to express things and notions; not, as the common ones, letters or sounds: yet to be mute, like letters, and arbitrary; not emblematical, like hieroglyphics.

Thus, every nation should retain its own language, yet every one understand that of each other, without learning it; only by seeing a real or universal *character*, which should signify the same things to all people, by what sounds soever each express it in their particular idiom. For instance, by seeing the *character* destined to signify *to drink*, an Englishman should read *to drink;* a Frenchman, *boire;* a Latin, *bibere;* a Greek πινειν; a Jew, שמה; a German, *trincken;* and so of the rest: in the same manner as seeing a horse, each people expresses it after their own manner; but all mean the same animal.

This real *character* is no chimera; the Chinese and Japanese have already something like it. They have a common *character* which each of those nations understand alike in their several languages; though they pronounce them with such different sounds, that they do not understand one another in speaking.

The first and most considerable attempts for a *real character*, or philosophical language, in Europe, are those of Bishop Wilkins and Dalgarme: but these, with how much art soever they were contrived, have yet proved ineffectual.

M. Leibnitz had some thoughts the same way; he thinks those great men did not hit the right method. It was probable, indeed, that by their means, people, who do not understand one another might easily have a commerce together; but they have not hit on true *real characters.*

According to him, the *characters* should resemble those used in algebra: which, in effect, are very simple, yet very expressive; without any thing superfluous or equivocal; and contain all the varieties required.

The *real character* of Bishop Wilkins has its just applause: Dr Hook recommends it on his own knowledge and experience, as a most excellent scheme; and to engage the world to the study thereof, publishes some fine inventions of his own therein.

M. Leibnitz tells us, he had under consideration an *alphabet of human thoughts*; in order to a new philosophical language, on his own scheme: but his death prevented its being brought to maturity.

M. Lodwic, in the Philosophical Transactions, gives us a plan of *an universal alphabet* or *character* of another kind: this was to contain an enumeration of all such single sounds, or letters, as are used in any language; by means whereof, people should be enabled to pronounce truly and readily any language; to describe the pronunciation of any language that shall be pronounced in their hearing, so as others accustomed to this language, though they had never heard the language pronounced, shall at first be able truly to pronounce it: and, lastly, this *character* to serve as a standard to perpetuate the sounds of any language. In the Journal Litteraire, *an.* 1720, we have a very ingenious project for an universal *character*. The author, after obviating the objections that might be made against the feasibleness of such schemes in the general, proposes his own: his *characters* are to be the common Arabic, or numeral figures. The combinations of these nine are sufficient to express distinctly an incredible quantity of numbers, much more than we shall need terms to signify our actions, goods, evils, duties, passions, &c. Thus is all the trouble of framing and learning any new *character* at once saved; the Arabic figures having already all the universality required. Characters.

The advantages are immense. For, 1*mo*, We have here a stable, faithful interpreter; never to be corrupted or changed, as the popular languages continually are. 2*do*, Whereas the difficulty of pronouncing a foreign language is such as usually gives the learner the greatest trouble, and there are even some sounds which foreigners never attain to: in the *character* here proposed, this difficulty has no place: every nation is to pronounce them according to the particular pronunciation that already obtains among them. All the difficulty is, the accustoming the pen and the eye to affix certain notions to *characters* that do not, at first sight, exhibit them. But this trouble is no more than we find in the study of any language whatever.

The inflections of words are here to be expressed by the common letters. For instance, the same *character* shall express a *filly* or a *colt*, a *horse* or a *mare*, an *old horse* or an *old mare*, as accompanied with this or that distinctive letter, which shall show the sex, youth, maturity, or old age: a letter also to express the bigness or size of things; thus *v. g.* a man with this or that letter, to signify a *great man*, or a *little man*, &c.

The use of those letters belongs to the grammar; which, once well understood, would abridge the vocabulary exceedingly. An advantage of this grammar is, that it would only have one declension and one conjugation: those numerous anomalies of grammarians are exceeding troublesome; and arise hence, that the common languages are governed by the populace, who never reason on what is best: but in the *character* here proposed, men of sense having the introduction of it, would have a new ground, whereon to build regularly.

A new universal character has been proposed by Mr Northmore of London, by which different nations may communicate their sentiments to each other. His original plan was, to make the same numerical figure represent the same word in all languages. But he found afterwards that it might be improved, by using a figure not for every word, but every *useful* word. And even these he thinks might be abbreviated by adopting certain uniform fixed signs, the number of which would not exceed 20, for the various parts of speech. Words of negation, he proposed, to be expressed by a prefixed sign. A few instances will explain the author's meaning.

Suppose the number 5 to represent the word *see*,

6 — — *a man*,
7 — — *happy*,
8 — — *never*,
9 — — *I*

" I

Characters. "I would then (ſays he) expreſs the tenſes, genders, caſes, &c. *in all languages*, in ſome ſuch *uniform* manas following:

(1)	5	=	*preſent tenſe*, —	ſee,
(2)	·5	=	*perfect tenſe*, —	ſaw,
(3)	:5	=	*perfect participle*, —	ſeen,
(4)	5:	=	*preſent participle*, —	ſeeing,
(5)	5·	=	*future*, — —	will ſee,
(6)	$\underline{5}$	=	*ſubſtantive*, —	ſight,
(7)	$\underline{\underline{5}}$	=	*perſonal ſubſtantive*, —	ſpectator,
(8)	$\overline{\overline{6}}$	=	*nominative caſe*, —	a man,
(9)	$\ddot{6}$	=	*genitive*, —	of a man,
(10)	$\dddot{6}$	=	*dative*, — —	to a man,
(11)	$\overset{\frown}{6}$	=	*feminine*, — —	a woman,
(12)	+6	=	*plural*, — —	men,
(13)	$\overset{\smile}{7}$	=	*poſitive*, — —	happy,
(14)	$\overset{\wedge}{7}$	=	*comparative*, —	happier,
(15)	$\overset{M}{7}$	=	*ſuperlative*, —	happieſt,
	$\underline{7}$	=	as above, N° 6. —	happineſs,
(16)	—7	=	*negation*, — —	unhappy.

"From the above ſpecimen, I ſhould find no difficulty in comprehending the following ſentence, though it were written in the language of the Hottentots:

9, 8, ·5, —$\overset{\wedge}{7}$, $\overset{\frown}{6}$. *I never ſaw a more unhappy woman.*

"Thoſe languages which do not uſe the pronoun prefixed to the verb, as the Greek and Roman, &c. may apply it, in a ſmall character, ſimply to denominate the perſon; thus, inſtead of 9, 8, ·5, *I never ſaw;* they may write, 8, $_{9}$·5, which will ſignify that the verb is in the firſt perſon, and will ſtill have the ſame meaning."

Our author thinks, that according to this ſcheme of an univerſal character, about 20 ſigns, and leſs than 10,000 *choſen* words (ſynonyms being ſet aſide), would anſwer all the ends propoſed; and that foreigners, by referring to their numerical dictionary, would eaſily comprehend each other. He proceeds next to ſhew how appropriate ſounds may be given to his ſigns, and an univerſal *living language* formed from the univerſal *characters*.

To attain this end, he propoſes to diſtinguiſh the ten numerals by ten monoſyllabic names of eaſy pronunciation, and ſuch as may run without difficulty into one another. To illuſtrate his ſcheme, however, he calls them, for the preſent, by their common Engliſh names; but would pronounce each number made uſe of by uttering ſeparately its component parts, after the manner of accountants. Thus let the number 6943 repreſent the word *horſe*, he would not, in the univerſal language, call a horſe *ſix thouſand nine hundred and forty-three*, but *ſix*, *nine*, *four*, *three*, and ſo on for all the words of a ſentence, making the proper ſtop at the end of each. In the ſame manner, a diſtinct appellation muſt be appropriated to each of the prefixed ſigns, to be pronounced immediately after the numeral to which it is an appendage. Thus if *plu* be the appellation or the ſign of the plural number, *ſix*, *nine*, *four*, *three*, *plu* will be *horſes*. Characters.

"Thus (ſays our author), I hope, it is evident that about 30 or 40 diſtinct ſyllables are ſufficient for the above purpoſe; but I am much miſtaken if *eleven* only will not anſwer the ſame end. This is to be done by ſubſtituting the firſt 20 or 30 numerals for the ſigns, and ſaying, as in algebra, that a term is in the power of ſuch a number, which may be expreſſed by the ſimple word *under*. *Ex. gr.* Let 6943 repreſent the word *horſe*; and ſuppoſe 4 to be the ſign of the plural number, I would write the word thus, $_{6}^{4}9_{3}^{4}$; and pronounce it, ſix, nine, four, three, in the power of or *under* four. By theſe means eleven diſtinct appellations would be ſufficient, and time and uſe would much abbreviate the pronunciation."

But the difficulty is not in inventing the moſt ſimple, eaſy, and commodious *character*, but in engaging the ſeveral nations to uſe it; there being nothing they agree leſs in, than the underſtanding and purſuing their common intereſt.

3. Literal characters may again be divided, with reſpect to the nations among whom they have been invented, into Greek characters, Roman characters, Hebrew characters, &c. The Latin character now uſed through all Europe, was formed from the Greek, as the Greek was from the Phœnician; and the Phœnician, as well as the Chaldee, Syriac, and Arabic characters, were formed from the ancient Hebrew, which ſubſiſted till the Babyloniſh captivity; for after that event the character of the Aſſyrians, which is the ſquare Hebrew now in uſe, prevailed, the ancient being only found on ſome Hebrew medals, commonly called Samaritan medals. It was in 1091 that the Gothic characters, invented by Ulfilas, were aboliſhed, and the Latin ones eſtabliſhed in their room.

Medalliſts obſerve, that the Greek character, conſiſting only of majuſcule letters, has preſerved its uniformity on all medals, as low as the time of Gallienus, from which time it appears ſomewhat weaker and rounder: from the time of Conſtantine to Michael we find only Latin characters: after Michael, the Greek characters recommence; but from that time they began to alter with the language, which was a mixture of Greek and Latin. The Latin medals preſerved both their characters and language as low as the tranſlation of the ſeat of the empire to Conſtantinople: towards the time of Decius the character began to loſe its roundneſs and beauty; ſome time after, it retrieved and ſubſiſted tolerably till the time of Juſtin, when it degenerated gradually into the Gothic. The rounder, then, and better formed a character is upon a medal, the fairer pretence it has to antiquity.

II. *Numeral* CHARACTERS, or characters uſed to expreſs numbers, are either letters or figures.

The Arabic character, called alſo the common one, becauſe it is uſed almoſt throughout Europe in all ſorts of calculations, conſiſts of theſe ten digits, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0.

The Roman numeral character conſiſts of ſeven majuſcule letters of the Roman alphabet, viz. I, V, X, L, C, D, M. The I denotes one, V five, X ten, L fifty, C a hundred, D five hundred, and M a thouſand. The I repeated twice makes two, II.; thrice, three,

Characters. three, III. Four is expreſſed thus, IV. as I before V or X takes an unit from the number expreſſed by theſe letters. To expreſs ſix, an I is added to a V, VI.; for ſeven, two, VII.; and for eight, three, VIII. Nine is expreſſed by an I before X, thus, IX. The ſame remark may be made of the X before L or C, except that the diminution is by tens; thus, XL denotes forty, XC ninety, and LX ſixty. The C before D or M diminiſhes each by a hundred. The number five hundred is ſometimes expreſſed by an I before a C inverted, thus, IↃ; and inſtead of M, which ſignifies a thouſand, an I is ſometimes uſed between two C's, the one direct, and the other inverted, thus, CIↃ. The addition of C and Ↄ before or after raiſes CIↃ by tens; thus, CCIↃↃ expreſſes ten thouſand, CCCIↃↃↃ a hundred thouſand. The Romans alſo expreſſed any number of thouſands by a line drawn over any numeral leſs than a thouſand; thus, V̄ denotes five thouſand, L̄X̄ ſixty thouſand; ſo likewiſe M̄ is one million, M̄M̄ is two millions, &c.

The Greeks had three ways of expreſſing numbers: 1. Every letter, according to its place in the alphabet, denoted a number, from α, one, to ω, twenty-four. 2. The alphabet was divided into eight units, α one, β two, γ three, &c.; into eight tens, ι ten, κ twenty, λ thirty, &c.; and eight hundreds, ϱ one hundred, σ two hundred, τ three hundred, &c. 3. I ſtood for one, Π five, Δ ten, H a hundred, X a thouſand, M ten thouſand; and when the letter Π encloſed any of theſe, except I, it ſhowed the encloſed letter to be five times its value; as, |Δ| fifty, |H| five hundred, |X| five thouſand, |M| fifty thouſand.

The French CHARACTERS uſed in the chamber of accounts, and by perſons concerned in the management of the revenue, is properly ſpeaking, nothing elſe than the Roman numerals, in letters that are not majuſcule: thus, inſtead of expreſſing fifty-ſix by LVI, they denote it by ſmaller characters, lvj.

III. CHARACTERS of Abbreviations, &c. in ſeveral of the arts, are ſymbols contrived for the more conciſe and immediate conveyance of the knowledge of things. For the

CHARACTERS uſed in Algebra, ſee ALGEBRA, Introduction.

Of the Aſpects.

☌ or S Conjunction	△ Trine
SS Semiſextile	Bq Biquintile
* Sextile	Vc Quincunx
Q Quintile	☍ Oppoſition
□ Quartile	☊ Dragon's head
Td Tredecile	☋ Dragon's tail

Of Time.

A. M. *ante meridiem*, before the ſun comes upon the meridian.
O. or N. noon.
P.M. *poſt meridiem*, when the ſun is paſt the meridian.

CHARACTERS in Commerce.

D° *ditto*, the ſame	q^rs quarters
N° *numero*, or number	S or *s* ſhillings
F° *folio*, or page	*d* pence or deniers
C or ⊕ hundred weight, or 112 pounds	℔ pound weight.
	R° *recto* } *folio*
	V° *vero* }

£. or *l.* pounds ſterling	R^x rixdollar
p^r *per*, or by, p^r *ann.* by the year, p^r *cent.*	D^t ducat
	P. S. poſtſcript, &c.

Characters.

CHARACTERS in Geometry and Trigonometry.

‖ the character of paralleliſm	V equiangular or ſimilar
△ triangle	⫡ equilateral
□ ſquare	∠ an angle
▭ rectangle	∠ right angle
⊙ circle	⊥ perpendicular

° denotes a degree; thus, 45° implies 45 degrees.
′ denotes a minute; thus, 50′ is 50 minutes. ″, ‴, ⁗, denote ſeconds, thirds, and fourths: and the ſame characters are uſed where the progreſſions are by tens, as it is here by ſixties.

CHARACTERS in Grammar, Rhetoric, Poetry, &c.

( ) parentheſis	D. D. doctor in divinity
[ ] crotchet	V. D. M. miniſter of the word of God
- hyphen	LL. D. doctor of laws
’ apoſtrophe	J. V. D. doctor of civil and canon law
′ emphaſis or accent	" quotation
˘ breve	M. D. doctor in phyſic
.. dialyſis	A. M. maſter of arts
^ caret and circumflex	A. B. bachelor of arts
† ‡ and * references	
§ ſection or diviſion	
¶ paragraph	

F. R. S. fellow of the royal ſociety.

For the other characters uſed in grammar, ſee COMMA, COLON, SEMICOLON, &c.

CHARACTERS among the ancient Lawyers, and in ancient Inſcriptions.

§ paragraph	P. P. pater patriæ
ff digeſts	C. Code
Scto. ſenatus conſulto	C. C. conſules
E. extra	T. titulus
S. P. Q. R. ſenatus populuſque Romanus	P. P. D. D. propria pecunia dedicavit
	D. D. M. dono dedit monumentum.

CHARACTERS in Medicine and Pharmacy.

℞ recipe	M. manipulus, a handful
a, *aa*, or ana, of each alike	P. a pugil
℔ a pound, or a pint	P. Æ. equal quantities
℥ an ounce	S. A. according to art
ʒ a drachm	q. s. a ſufficient quantity
℈ a ſcruple	q. pl. as much as you pleaſe
gr. grains	P. P. pulvis patrum, the Jeſuits bark.
ß or *ſs* half of any thing	
cong. congius, a gallon	
coch. cochleare, a ſpoonful	

CHARACTERS upon Tomb-ſtones.

S. V. Siſte viator, *i. e.* Stop traveller.
M. S. Memoriæ ſacrum, *i. e.* Sacred to the memory.

Characters. D. M. Diis manibus.
J. H. S. Jeſus.
X. P. a character found in the catacombs, about the meaning of which authors are not agreed.

Characters uſed in Muſic, and of Muſical Notes with their proportions, are as follow.

character of a large	8	crotchet	$\frac{1}{4}$
a long	4	quaver	$\frac{1}{8}$
a breve	2	ſemiquaver	$\frac{1}{16}$
a ſemibreve	1	demiſemiquaver	$\frac{1}{32}$
a minim	$\frac{1}{2}$		

♯ character of a ſharp note; this character at the beginning of a line or ſpace, denotes that all the notes in that line are to be taken a ſemitone higher than in the natural ſeries; and the ſame affects all the octaves above and below, though not marked: but when prefixed to any particular note, it ſhows that note alone to be taken a ſemitone higher than it would be without ſuch a character.

♭ or *b*, character of a flat note: this is the contrary to the other above; that is, a ſemitone lower.

♮ character of a natural note: when in a line or ſeries of artificial notes, marked at the beginning ♭ or ♯, the natural note happens to be required, it is denoted by this character.

𝄞 character of the treble cliff.

𝄡 character of the mean cliff.

𝄢 baſs cliff.

$\frac{2}{4}$ or $\frac{4}{8}$, characters of common duple time, ſignifying the meaſure of two crotchets to be equal to two notes, of which four make a ſemibreve.

𝄴 𝄵 𝄶 characters that diſtinguiſh the movements of common time, the firſt implying ſlow, the ſecond quick, and the third very quick.

$\frac{1}{2}$, $\frac{1}{1}$, $\frac{3}{4}$, $\frac{3}{8}$, $\frac{3}{16}$, characters of ſimple triple time, the meaſure of which is equal to three ſemibreves, or to three minims.

$\frac{4}{6}$, $\frac{6}{8}$, or $\frac{6}{16}$, characters of a mixed triple time, where the meaſure is equal to ſix crotchets, or ſix quavers.

$\frac{9}{4}$, or $\frac{9}{8}$, or $\frac{9}{16}$, or $\frac{9}{1}$, or $\frac{9}{2}$, characters of compound triple time.

$\frac{4}{12}$, $\frac{8}{12}$, $\frac{12}{16}$, or $\frac{1}{12}$, or $\frac{2}{12}$, characters of that ſpecies of triple time called the meaſure of twelve times.

Character, in human life, that which is peculiar in the manners of any perſon, and diſtinguiſhes him from all others.

Good Character is particularly applied to that conduct which is regulated by virtue and religion; in an inferior but very common ſenſe, it is underſtood of mere honeſty of dealing between man and man. The importance of a good character in the commerce of life ſeems to be univerſally acknowledged.—To thoſe who are to make their own way either to wealth or honours, a good character is uſually no leſs neceſſary than addreſs and abilities. To tranſcribe the obſervation of an elegant moraliſt: though human nature is degenerate, and corrupts itſelf ſtill more by its own inventions; yet it uſually retains to the laſt an eſteem for excellence. But even if we are arrived at ſuch an extreme degree of depravity as to have loſt our native reverence for virtue; yet a regard to our own intereſt and ſafety, which we ſeldom loſe, will lead us to apply for aid, in all important tranſactions, to men whoſe integrity is unimpeached. When we chooſe an aſſiſtant, a partner, a ſervant, our firſt inquiry is concerning his character. When we have occaſion for a counſellor or attorney, a phyſician or apothecary, whatever we may be ourſelves, we always chooſe to truſt our property and perſons to men of the beſt character. When we fix on the tradeſmen who are to ſupply us with neceſſaries, we are not determined by the ſign of the lamb, or the wolf, or the fox; nor by a ſhop fitted up in the moſt elegant taſte; but by the faireſt reputation. Look into a daily newſpaper, and you will ſee, from the higheſt to the loweſt rank, how important the characters of the employed appear to the employers. After the advertiſement has enumerated the qualities required in the perſon wanted, there conſtantly follows, that none need apply who cannot bring an undeniable character. Offer yourſelf as a candidate for a ſeat in parliament, be promoted to honour and emolument, or in any reſpect attract the attention of mankind upon yourſelf, and if you are vulnerable in your character, you will be deeply wounded. This is a general teſtimony in favour of honeſty, which no writings and no practices can poſſibly refute. Character.

Young men, therefore, whoſe characters are yet unfixed, and who conſequently may render them juſt ſuch as they wiſh, ought to pay great attention to the firſt ſteps which they take on entrance into life. They are uſually careleſs and inattentive to this object. They purſue their own plans with ardour, and neglect the opinions which others entertain of them. By ſome thoughtleſs action or expreſſion, they ſuffer a mark to be impreſſed upon them, which ſcarcely any ſubſequent merit can entirely eraſe. Every man will find ſome perſons, who, though they are not profeſſed enemies, yet view him with an envious or a jealous eye, and who will gladly revive any tale to which truth has given the ſlighteſt foundation.

In this turbulent and confuſed ſcene, where our words and actions are often miſunderſtood, and oftener miſrepreſented, it is indeed difficult even for innocence and integrity to avoid reproach, abuſe, contempt, and hatred. Theſe not only hurt our intereſt and impede our advancement in life, but ſorely afflict the feelings of a tender and delicate mind. It is then the part of wiſdom firſt to do every thing in our power to preſerve an irreproachable character, and then to let our happineſs depend chiefly on the approbation of our own conſciences, and on the advancement of our intereſt in a world where liars ſhall not be believed, and where ſlanders ſhall receive countenance from none but him who, in Greek, is called, by way of eminence, *Diabolus*, or the calumniator.

Character, in *Poetry*, particularly the epopee and drama, is the reſult of the manners or peculiarities by which each perſon is diſtinguiſhed from others.

The poetical character, ſays M. Boſſu, is not properly any particular virtue or quality, but a compoſition of ſeveral which are mixed together, in a different degree, according to the neceſſity of the fable and the unity of the action; there muſt be one, however, to reign over all the reſt; and this muſt be found, in ſome degree, in every part. The firſt quality in Achilles, is wrath; in Ulyſſes, diſſimulation; and in Æneas,

Character, Characteriſtic.

Æneas, mildneſs: but as theſe characters cannot be alone, they muſt be accompanied with others to embelliſh them, as far as they are capable, either by hiding their defects, as in the anger of Achilles, which is palliated by extraordinary valour; or by making them centre in ſome ſolid virtue, as in Ulyſſes, whoſe diſſimulation makes a part of his prudence; and in Æneas, whoſe mildneſs is employed in a ſubmiſſion to the will of the gods. In the making up of which union, it is to be obſerved, the poets have joined together ſuch qualities as are by nature the moſt compatible; valour with anger, piety with mildneſs, and prudence with diſſimulation. The fable required prudence in Ulyſſes, and piety in Æneas; in this, therefore, the poets were not left to their choice: but Homer might have made Achilles a coward without abating any thing from the juſtneſs of this fable; ſo that it was the neceſſity of adorning his character, that obliged him to make him valiant: the character, then of a hero in the epic poem, is compounded of three ſorts of qualities; the firſt eſſential to the fable; the ſecond, embelliſhments of the firſt; and valour, which ſuſtains the other two, makes the third.

Unity of character is as neceſſary as the unity of the fable. For this purpoſe a perſon ſhould be the ſame from the beginning to the end: not that he is always to betray the ſame ſentiments, or one paſſion; but that he ſhould never ſpeak nor act inconſiſtently with his fundamental character. For inſtance, the weak may ſometimes ſally into a warmth, and the breaſt of the paſſionate be calm, a change which often introduces in the drama a very affecting variety: but if the natural diſpoſition of the former was to be repreſented as boiſterous, and that of the latter mild and ſoft, they would both act out of character, and contradict their perſons.

True characters are ſuch as we truly and really ſee in men, or may exiſt without any contradiction to nature: no man queſtions but there have been men as generous and as good as Æneas, as paſſionate and as violent as Achilles, as prudent and wiſe as Ulyſſes, as impious and atheiſtical as Mezentius, and as amorous and paſſionate as Dido; all theſe characters, therefore, are true, and nothing but juſt imitations of nature. On the contrary, a character is falſe when an author ſo feigns it, that one can ſee nothing like it in the order of nature wherein he deſigns it ſhall ſtand: theſe characters ſhould be wholly excluded from a poem, becauſe tranſgreſſing the bounds of probability and reaſon, they meet with no belief from the readers; they are fictions of the poet's brain, not imitations of nature; and yet all poetry conſiſts of an imitation of nature.

Character is alſo uſed for certain viſible qualities, which claim reſpect or reverence to thoſe veſted therewith.—The majeſty of kings gives them a character which procures reſpect from the people. A biſhop ſhould ſuſtain his character by learning and ſolid piety, rather than by worldly luſtre, &c. The law of nations ſecures the character of an ambaſſador from all inſults.

Character, among naturaliſts, is ſynonymous with the definition of the genera of animals, plants, &c.

CHARACTERISTIC, in general, is that which characterizes a thing or perſon, i. e. conſtitutes its character, whereby it is diſtinguiſhed. See Character.

Characteriſtic, Charade.

Characteriſtic, is peculiarly uſed in grammar, for the principal letter of a word: which is preſerved in moſt of its tenſes and moods, its derivatives and compounds.

Characteriſtic of a Logarithm, is its index or exponent. See Logarithm.

Characteriſtic Triangle of a Curve, in the higher geometry, is a rectilinear right-angled triangle, whoſe hypothenuſe makes a part of the curve, not ſenſibly different from a right line. It is ſo called, becauſe curve lines are uſed to be diſtinguiſhed hereby. See Curve.

CHARADE, the name of a new ſpecies of compoſition or literary amuſement. It owes its name to the idler who invented it. Its ſubject muſt be a word of two ſyllables, each forming a diſtinct word: and theſe two ſyllables are to be concealed in an enigmatical deſcription, firſt ſeparately, and then together. The exerciſe of charades, if not greatly inſtructive, is at leaſt innocent and amuſing. At all events, as it has made its way into every faſhionable circle, and has employed even Garrick, it will ſcarcely be deemed unworthy of attention. The fillineſſes indeed of moſt that have appeared in the papers under this title, are not only deſtitute of all pleaſantry in the ſtating, but are formed in general of words utterly unfit for the purpoſe. They have therefore been treated with the contempt they deſerved. In trifles of this nature, inaccuracy is without excuſe. The following examples therefore are at leaſt free from this blemiſh.

I.

My *firſt*, however here abuſed,
Deſigns the ſex alone;
In Cambria, ſuch is cuſtom's pow'r,
'Tis Jenkin, John, or Joan.
My *ſecond* oft is loudly call'd,
When men prepare to fiſt it:
Its name delights the female ear;
Its force, may none reſiſt it!
It binds the weak, it binds the ſtrong,
The wealthy and the poor;
Still 'tis to joy a paſſport deem'd,
For ſullied fame a cure.
It may enſure an age of bliſs,
Yet mis'ries oft attend it;
To fingers, ears, and noſes too,
Its various lords commend it.
My *whole* may chance to make one drink,
Though vended in a fiſh ſhop;
'Tis now the monarch of the ſeas,
And has been an archbiſhop. *Her-ring.*

II.

My *firſt*, when a Frenchman is learning Engliſh, ſerves him to ſwear by. My *ſecond*, is either hay or corn. My *whole*, is the delight of the preſent age; and will be the admiration of poſterity. *Gar-rick.*

III.

My *firſt*, is plowed for various reaſons, and grain is frequently buried in it to little purpoſe. My *ſecond*, is neither riches nor honours; yet the former would generally be given for it, and the latter is often taſteleſs without it. My *whole* applies equally to ſpring, ſummer, autumn, and winter: and both fiſh and fleſh,

Charadrius || Charcoal.

praiſe and cenſure, mirth and melancholy, are the better for being in it. *Sea-ſon.*

IV.

My *firſt*, with the moſt rooted antipathy to a Frenchman, prides himſelf, whenever they meet, upon ſticking cloſe to his jacket. My *ſecond*, has many virtues, nor is it its leaſt that it gives name to my firſt. My *whole*, may I never catch! *Tar-tar!*

V.

My *firſt*, is one of England's prime boaſts; it rejoices the ear of a horſe, and anguiſhes the toe of a man. My *ſecond*, when brick, is good; when ſtone, better; when *wooden* beſt of all. My *whole* is famous alike for rottenneſs and tin. *Corn-wall.*

VI.

My *firſt* is called bad or good,
May pleaſure or offend ye;
My *ſecond*, in a thirſty mood,
May very much befriend ye.
My *whole*, though ſtyled a "cruel word,"
May yet appear a kind one;
It often may with joy be heard,
With tears may often blind one. *Fare-well.*

VII.

My *firſt* is equally friendly to the thief and the lover, the toper and the ſtudent. My *ſecond* is light's oppoſite: yet they are frequently ſeen hand in hand; and their union, if judicious, gives much pleaſure. My *whole*, is tempting to the touch, grateful to the ſight, fatal to the taſte. *Night-ſhade.*

CHARADRIUS, the PLOVER and DOTTEREL. See ORNITHOLOGY *Index*.

CHARAG, the tribute which Chriſtians and Jews pay to the grand ſignior.

It conſiſts of ten, twelve, or fifteen francs per annum, according to the eſtate of the party. Men begin to pay it at nine or at ſixteen years old; women are diſpenſed with, as alſo prieſts, rabbins, and religious.

CHARAIMS, a ſect of the Jews in Egypt. They live by themſelves, and have a ſeparate ſynagogue; and as the other Jews are remarkable for their eyes, ſo are thoſe for their large noſes, which run through all the families of this ſect. Theſe are the ancient Eſſenes. They ſtrictly obſerve the five books of Moſes, according to the letter; and receive no written traditions. It is ſaid that the other Jews would join the *Charaims;* but thoſe not having obſerved the exact rules of the law with regard to divorces, theſe think they live in adultery.

CHARANTIA. See MOMORDICA, BOTANY *Index*.

CHARBON, in the manege, that little black ſpot or mark which remains after a large ſpot in the cavity of the corner teeth of a horſe: about the ſeventh or eighth year, when the cavity fills up, the tooth being ſmooth and equal, it is ſaid to be raſed.

CHARCAS, the ſouthern diviſion of Peru in South America, remarkable for the ſilver mines of Potoſi.

CHARCOAL, a ſort of artificial coal, or fuel, conſiſting of wood half burnt; chiefly uſed where a clear ſtrong fire, without ſmoke, is required; the humidity of the wood being here moſtly diſſipated, and exhaled in the fire wherein it is prepared.

Charcoal.

The microſcope diſcovers a ſurpriſing number of pores in charcoal: they are diſpoſed in order, and traverſe it lengthwiſe; ſo that there is no piece of charcoal, how long ſoever, but may be eaſily blown through. If a piece be broken pretty ſhort, it may be ſeen through with a microſcope. In a range the 18th part of an inch long, Dr Hook reckoned 150 pores; whence he concludes, that in a charcoal of an inch diameter, there are not leſs than 5,724,000 pores. It is to this prodigious number of pores, that the blackneſs of charcoal is owing: for the rays of light ſtriking on the charcoal, are received and abſorbed in its pores, inſtead of being reflected; whence the body muſt of neceſſity appear black, blackneſs in a body being no more than a want of reflection. Charcoal was anciently uſed to diſtinguiſh the bounds of eſtates and inheritances; as being incorruptible, when let very deep within ground. In effect, it preſerves itſelf ſo long, that there are many pieces found entire in the ancient tombs of the northern nations. M. Dodart ſays, there is charcoal made of corn, probably as old as the days of Cæſar: he adds, that it has kept ſo well, that the wheat may be ſtill diſtinguiſhed from the rye; which he looks on as proof of its incorruptibility.

The operation of charring wood, is performed in the following manner: The wood intended for this purpoſe is cut into proper lengths, and piled up in heaps near the place where the charcoal is intended to be made: when a ſufficient quantity of wood is thus prepared, they begin conſtructing their ſtacks, for which there are three methods. The firſt is this: They level a proper ſpot of ground, of about 12 or 15 feet in diameter, near the piles of wood; in the centre of this area a large billet of wood, ſplit acroſs at one end and pointed at the other, is fixed with its pointed extremity in the earth, and two pieces of wood inſerted through the clefts of the other end, forming four right angles; againſt theſe croſs pieces four other billets of wood are placed, one end on the ground, and the other leaning againſt the angles. This being finiſhed, a number of large and ſtraight billets are laid on the ground to form a floor, each being as it were the radius of the circular area: on this floor a proper quantity of bruſh or ſmall wood is ſtrewed, in order to fill up the interſtices, when the floor will be complete; and in order to keep the billets in the ſame order and poſition in which they were firſt arranged, pegs or ſtumps are driven into the ground in the circumference of the circle, about a foot diſtant from one another: upon this floor a ſtage is built with billets ſet upon one end, but ſomething inclining towards the central billet; and on the tops of theſe another floor is laid in a horizontal direction, but of ſhorter billets, as the whole is, when finiſhed, to form a cone.

The ſecond method of building the ſtacks for making charcoal is performed in this manner: A long pole is erected in the centre of the area above deſcribed, and ſeveral ſmall billets ranged round the pole on their ends: the interſtices between theſe billets and the pole is filled with dry bruſhwood, then a floor is laid, on that a ſtage in a reclining poſition, and on that a ſecond floor, &c. in the ſame manner as deſcribed above; but in the lower floor there is a billet larger and longer than the reſt, extending from the

central

Charcoal. central pole to ſome diſtance beyond the circumference of the circle.

The third method is this: A chimney, or aperture of a ſquare form, is built with billets in the centre, from the bottom to the top; and round theſe, floors and inclined ſtages are erected, in the ſame manner as in the ſtacks above deſcribed, except that the baſe of this, inſtead of being circular like the others, is ſquare; and the whole ſtack, when completed, forms a pyramid.

The ſtack of either form being thus finiſhed, is coated over with turf, and the ſurface plaſtered with a mixture of earth and charcoal duſt well tempered together.

The next operation is the ſetting the ſtack on fire. In order to this, if it be formed according to the firſt conſtruction, the central billet in the upper ſtage is drawn out, and ſome pieces of very dry and combuſtible wood are placed in the void ſpace, called, by workmen, the chimney, and fire ſet to theſe pieces. If the ſtack be built according to the ſecond conſtruction, the central pole is drawn out, together with the large horizontal billet above deſcribed; and the void ſpace occupied by the latter being filled with pieces of very dry combuſtible wood, the fire is applied to it at the baſe of the ſtack. With regard to the third conſtruction, the ſquare aperture or chimney is filled with ſmall pieces of very dry wood, and the fire applied to it at the top or apex of the pyramidal ſtack. When the ſtack is ſet on fire, either at the top or bottom, the greateſt attention is neceſſary in the workman; for in the proper management of the fire the chief difficulty attending the art of making good charcoal conſiſts. In order to this, care is taken, as ſoon as the flame begins to iſſue ſome height above the chimney, that the aperture be covered with a piece of turf, but not ſo cloſe as to hinder the ſmoke from paſſing out; and whenever the ſmoke appears to iſſue very thick from any part of the pile, the aperture muſt be covered with a mixture of earth and charcoal duſt. At the ſame time, as it is neceſſary that every part of the ſtack ſhould be equally burnt, it will be requiſite for the workman to open vents in one part and ſhut them in another. In this manner the fire muſt be kept up till the charcoal be ſufficiently burnt, which will happen in about two days and a half if the wood be dry; but if green, the operation will not be finiſhed in leſs than three days. When the charcoal is thought to be ſufficiently burnt, which is eaſily known from the appearance of the ſmoke, and the flames no longer iſſuing with impetuoſity through the vents; all the apertures are to be cloſed up very carefully with a mixture of earth and charcoal duſt, which, by excluding all acceſs of the external air, prevents the coals from being any further conſumed, and the fire goes out of itſelf. In this condition it is ſuffered to remain, till the whole is ſufficiently cooled; when the cover is removed, and the charcoal is taken away. If the whole proceſs is ſkilfully managed, the coals will exactly retain the figure of the pieces of wood: ſome are ſaid to have been ſo dexterous as to char an arrow without altering even the figure of the feather.

There are conſiderable differences in the coals of different vegetables, in regard to their habitude to fire: the very light coals of linen, cotton, ſome fungi, &c. readily catch fire from a ſpark, and ſoon burn out; the more denſe ones of woods and roots are ſet on fire more difficultly, and burn more ſlowly: the coals of the black berry-bearing alder, of the hazel, the willow, and the lime tree, are ſaid to anſwer beſt for the making of gunpowder and other pyrotechnical compoſitions, perhaps from their being eaſily inflammable: for the reduction of metallic calces thoſe of the heavier woods, as the oak and the beech, are preferable, theſe ſeeming to contain a larger proportion of the phlogiſtic principle, and that, perhaps, in a more fixed ſtate; conſidered as common fuel, thoſe of the heavy woods give the greateſt heat, and require the moſt plentiful ſupply of air to keep them burning; thoſe of the light woods preſerve a glowing heat, without much draught of air, till the coals themſelves are conſumed; the bark commonly crackles and flies about in burning, which the coal of the wood itſelf very ſeldom does. Charcoal.

Mathematical inſtrument makers, engravers, &c. find charcoal of great uſe to poliſh their braſs and copper plates after they have been rubbed clean with powdered pumice ſtone. Plates of horn are poliſhable in the ſame way, and a gloſs may be afterwards given with tripoli.

The coals of different ſubſtances are alſo uſed as pigments; hence the bone-black, ivory-black, &c. of the ſhops. Moſt of the paints of this kind, beſides their incorruptibility, have the advantage of a full colour, and work freely in all the forms in which powdery pigments are applied; provided they have been carefully prepared, by thoroughly burning the ſubject in a cloſe veſſel, and afterwards grinding the coal into a powder of due fineneſs. Pieces of charcoal are uſed alſo in their entire ſtate for tracing the outlines of drawings, &c.; in which intention they have an excellence, that their mark is eaſily wiped out. For theſe purpoſes, either the finer pieces of common charcoal are picked out and cut to a proper ſhape; or the pencils are formed of wood, and afterwards burnt into charcoal in a proper veſſel well covered. The artiſts commonly make choice of the ſmaller branches of the tree freed from the bark and pith; and the willow and vine are preferred to all others. This choice is confirmed by the experiments of Dr Lewis, who has found that the wood of the trunks of trees produces charcoal of a harder nature than their ſmall twigs or branches; and the hard woods, ſuch as box and guaiacum, produced coals very ſenſibly harder than the ſofter woods. Willow he prefers to all others. The ſhells and ſtones of fruits yielded coals ſo hard that they would ſcarce mark on paper at all; while the coals of the kernels of fruits were quite ſoft and mellow. The ſeveral coals produced by the doctor's experiments were levigated into fine powder, mixed both with gum water and oil, and applied as paints both thin and thick, and diluted with different degrees of white. All of them, when laid on thick, appeared of a ſtrong full black, nor could it be judged that one was of a finer colour than another; diluted with white, or when ſpread thin, they had all ſomewhat of a bluiſh caſt. *Philoſoph. Commerc. Arts.*

Horns and the bones both of fiſhes and land animals, gave coals rather gloſſier and deeper coloured than vegetables; and which, in general, were very hard, ſo as difficultly, or not at all, to ſtain paper. Here alſo the

Chardin || Charge.

the hardneſs of the coal ſeemed to depend on that of the ſubject from whence it was prepared; for ſilk, woollen, leather, blood, and the fleſhy parts of animals, yielded ſoft coals. Some of theſe differed from others very ſenſibly in colour; that of ivory is ſuperior to all the reſt, and indiſputably the fineſt of all the charcoal blacks. The animal coals had much leſs of the bluiſh caſt in them than the vegetable, many of them inclining rather to a brown. Charred pit coal, on the other hand, ſeemed to have this blueneſs in a greater degree. For the chemical properties of charcoal ſee CHEMISTRY *Index*.

CHARDIN, SIR JOHN, a celebrated traveller, was born at Paris in 1643. His father, who was a jeweller, had him educated in the Proteſtant religion; after which he travelled into Perſia and India. He traded in jewels, and died at London in 1713. The account he wrote of his travels is much eſteemed.

CHARENTON, the name of two towns of France, the one upon the Marmaude in the Bourbonnois; the other in the Iſle of France, near the confluence of the Marne with the Seine.

CHARES the Lydian, a celebrated ſtatuary, was the diſciple of Lyſippus; and made the famous Coloſſus of the ſun in the city of Rhodes. Flouriſhed 288 years before Chriſt.

CHARGE, in *Gunnery*, the quantity of powder and ball wherewith a gun is loaded for execution.

The rules for charging large pieces in war are, That the piece be firſt cleaned or ſcoured within ſide: that the proper quantity of powder be next driven in and rammed down: care, however, being taken, that the powder, in ramming, be not bruiſed, becauſe that weakens its effect; that a little quantity of paper, hay, lint, or the like, be rammed over it; and that the ball or ſhot be intruded. If the ball be red hot, a tompion, or trencher of green wood, is to be driven in before it. The common allowance for a charge of powder of a piece of ordnance, is half the weight of the ball. In the Britiſh navy, the allowance for 32 pounders is but ſeven ſixteenths of the weight of the bullet. But a late author is of opinion, that if the powder in all ſhip-cannon whatever was reduced to one-third weight of the ball, or even leſs, it would be of conſiderable advantage, not only by ſaving ammunition, but by keeping the guns cooler and quieter, and at the ſame time more effectually injuring the veſſels of the enemy. With the preſent allowance of powder the guns are heated, and their tackle and furniture ſtrained; and this only to render the bullets leſs efficacious: for a bullet which can but juſt paſs through a piece of timber, and loſes almoſt all its motion thereby, has a much better chance of rending and fracturing it, than if it paſſes through with a much greater velocity.

Robins' Propoſal for increaſing the ſtrength of the Navy.

CHARGE, in *Heraldry*, is applied to the figures repreſented on the eſcutcheon, by which the bearers are diſtinguiſhed from one another; and it is to be obſerved, that too many charges are not ſo honourable as fewer.

CHARGE of Lead, denotes a quantity of 36 pigs. See PIG.

To CHARGE, in the military language, is to attack the enemy either with horſe or foot.

CHARGE, in *Law*, denotes the inſtructions given to the grand jury, with reſpect to the articles of their inquiry, by the judge who preſides on the bench.

Charge || Chariot.

CHARGE, in *Law*, alſo ſignifies a thing done that bindeth him who doth it; and diſcharge is the removal of that charge. Lands may be charged in various ways; as, by grant of rent out of it, by ſtatutes, judgments, conditions, warranties, &c.

CHARGE of horning, in *Scots Law*. See HORNING.

CHARGE to enter Heir, in *Scots Law*, a writing paſſing under the ſignet, obtained at the inſtance of a creditor, either againſt the heir of his debtor, for fixing upon him the debt as repreſenting the debtor, which is called a general charge; or, againſt the debtor himſelf, or his heir, for the purpoſe of veſting him in the right of an heritable ſubject to which he has made up no title, in order the creditor may attach that ſubject for payment of his debt, in the ſame manner as if his debt or his heir were legally veſted in it by ſervice or otherwiſe. This laſt kind is called a *ſpecial charge*.

CHARGE, or rather *Overcharge*, in painting, is an exaggerated repreſentation of any perſon; wherein the likeneſs is preſerved, but at the ſame time ridiculed.

Few painters have the genius neceſſary to ſucceed in theſe charges: the method is, to ſelect and heighten ſomething already amiſs in the face, whether by way of defect, or redundancy: thus *v. g.* if Nature hath given a man a noſe a little larger than ordinary, the painter falls in with her, and makes the noſe extravagantly long: or if the noſe be naturally too ſhort, in the painting it will be a mere ſtump; and thus of the other parts.

CHARGED, in *Heraldry*, a ſhield carrying ſome impreſs or figure, is ſaid to be charged therewith; ſo alſo, when one bearing, or charge, has another figure added upon it, it is properly ſaid to be charged.

CHARGED, in electrical experiments, is when a phial, pane of glaſs, or other electric ſubſtance, properly coated on both ſides, has a quantity of electricity communicated to it; in which caſe the one ſide is always electrified poſitively, and the other negatively.

CHARIOT, a half coach, having only a ſeat behind, with a ſtool before. See COACH.

The chariots of the ancients, chiefly uſed in war, were called by the ſeveral names of *bigæ*, *trigæ*, &c. according to the number of horſes applied to draw them. Every chariot carried two men, who were probably the warrior and the charioteer; and we read of ſeveral men of note and valour employed in driving the chariot. When the warriors came to encounter in cloſe fight, they alighted out of the chariot, and fought on foot; but when they were weary, which often happened by reaſon of their armour, they retired into their chariot, and thence annoyed their enemies with darts and miſſile weapons. Theſe chariots were made ſo ſtrong, that they laſted for ſeveral generations.

Beſides this ſort, we find frequent mention of the *currus falcati*, or thoſe chariots armed with hooks or ſcythes, with which whole ranks of ſoldiers were cut off together, if they had not the art of avoiding the danger; theſe were not only uſed by the Perſians, Syrians, Egyptians, &c. but we find them among the an-

Chariot. cient Britons; and notwithſtanding the imperfect ſtate of ſome of the moſt neceſſary arts among that nation before the invaſion of the Romans, it is certain that they had war chariots in great abundance. By the Greek and Roman hiſtorians, theſe chariots are deſcribed by the ſix following names: viz. Benna, Petoritum, Currus or Carrus, Covinus, Eſſedum, and Rheda. The benna ſeems to have been a chariot deſigned rather for travelling than war. It contained two perſons, who were called *combennones*, from their ſitting together in the ſame machine. The petoritum ſeems to have been a larger kind of chariot than the benna; and is thought to have derived its name from the Britiſh word *pedwar*, ſignifying *four;* this kind of carriage having four wheels. The carrus or currus was the common cart or waggon. This kind of chariot was uſed by the ancient Britons, in times of peace, for the purpoſes of agriculture and merchandiſe, and, in time of war, for carrying their baggage, and wives and children, who commonly followed the armies of all the Celtic nations. The covinus was a war chariot, and a very terrible inſtrument of deſtruction; being armed with ſharp ſcythes and hooks for cutting and tearing all who were ſo unhappy as to come within its reach. This kind of chariot was made very ſlight, and had few or no men in it beſides the charioteer; being deſigned to drive with great force and rapidity, and to do execution chiefly with its hooks and ſcythes. The eſſedum and rheda were alſo war chariots, probably of a large ſize, and ſtronger made than the covinus, deſigned for containing a charioteer for driving it, and one or two warriors for fighting. The far greateſt number of the Britiſh war chariots ſeem to have been of this kind. Theſe chariots, as already obſerved, were to be found in great numbers among the Britons; inſomuch that Cæſar relates, that Caſſibelanus, after diſmiſſing all his other forces, retained no fewer than 4000 of theſe war chariots about his perſon. The ſame author relates, that, by continual experience, they had at laſt arrived at ſuch perfection in the management of their chariots, that "in the moſt ſteep and difficult places they could ſtop their horſes upon full ſtretch, turn them which way they pleaſed, run along the pole, reſt on the harneſs, and throw themſelves back into their chariots, with incredible dexterity."

Chariots, in the heathen mythology, were ſometimes conſecrated to the ſun; and the Scripture obſerves, that Joſiah burnt thoſe which had been offered to the ſun by the kings his predeceſſors. This ſuperſtitious cuſtom was an imitation of the heathens, and principally of the Perſians, who had horſes and chariots conſecrated in honour of the ſun. Herodotus, Xenophon, and Quintus Curtius, ſpeak of white chariots crowned, which were conſecrated to the ſun, among the Perſians, which in their ceremonies were drawn by white horſes conſecrated to the ſame luminary.

Triumphal Chariot, was one of the principal ornaments of the Roman celebration of a victory.

The Roman triumphal chariot was generally made of ivory, round like a tower, or rather of a cylindrical figure; it was ſometimes gilt at the top, and ornamented with crowns; and to repreſent a victory more naturally, they uſed to ſtain it with blood. It was uſually drawn by four white horſes; but oftentimes by lions, elephants, tygers, bears, leopards, dogs, &c. Chariſia ‖ Charity.

CHARISIA, in the heathen theology, a wake, or night feſtival, inſtituted in honour of the Graces. It continued the whole night, moſt of which time was ſpent in dancing; after which, cakes made of yellow flour mixed with honey, and other ſweatmeats, were diſtributed among the aſſiſtants.—Chariſia is alſo ſometimes uſed to ſignify the ſweatmeats uſed on ſuch occaſions.

CHARISIUS, in the heathen theology, a ſurname given to Jupiter. The word is derived from χαρις, *gratia*, "grace" or "favour;" he being the god by whoſe influence men obtain the favour and affection of one another. On which account the Greeks uſed at their meals to make a libation of a cup to Jupiter Chariſius.

CHARISTIA, a feſtival of the ancient Romans, celebrated in the month of February, wherein the relations by blood and marriage met, in order to preſerve a good correſpondence; and that if there happened to be any difference among them, it might be the more eaſily accommodated by the good humour and mirth of the entertainment. *Ovid. Faſt.* i. 617.

CHARISTICARY, commendatory, or donatory, a perſon to whom is given the enjoyment of the revenues of a monaſtery, hoſpital, or benefice.

The Chariſticaries among the Greeks, were a kind of donatories, or commendatories, who enjoyed all the revenues of hoſpitals and monaſteries without giving an account thereof to any perſon.—The original of this abuſe is referred to the Iconoclaſtæ, particularly Conſtantine Copronymus, the avowed enemy of the monks, whoſe monaſteries he gave away to ſtrangers. In after times, the emperors and patriarchs gave many to people of quality, not by way of gift to reap any temporal advantage from them, but to repair, beautify, and patronize them. At length avarice crept in, and thoſe in good condition were given away, eſpecially ſuch as were rich; and at laſt they were all given away, rich and poor, thoſe of men and of women, and that to laymen and to married men.

CHARITY, among divines, one of the three grand theological virtues, conſiſting in the love of God and of our neighbour, or the habit and diſpoſition of loving God with all our heart, and our neighbour as ourſelves.

Charity is alſo uſed for the effect of a moral virtue, which conſiſts in ſupplying the neceſſities of others, whether with money, counſel, aſſiſtance, or the like.

As pecuniary relief is generally the moſt efficacious, and at the ſame time that from which we are moſt apt to excuſe ourſelves, this branch of the duty merits particular illuſtration; and a better cannot be offered than what is contained in the following extracts (if we may be permitted to make them) from the elegant *Moral Syſtem* of Archdeacon *Paley*.

Whether pity be an inſtinct or a habit, it is in fact a property of our nature, which God appointed; and the final cauſe for which it was appointed, is to afford to the miſerable, in the compaſſion of their fellow-creatures, a remedy for thoſe inequalities and diſtreſſes which God foreſaw that many muſt be expoſed to, under

Charity. under every general rule for the diſtribution of property.

The Chriſtian Scriptures are more copious and explicit upon this duty than almoſt any other. The deſcription which Chriſt hath left us of the proceedings of the laſt day, eſtabliſhes the obligation of bounty beyond controverſy. "When the Son of Man ſhall come in his glory, and all the holy angels with him, then ſhall he ſit upon the throne of his glory, and before him ſhall be gathered all nations; and he ſhall ſeparate them one from another. Then ſhall the King ſay unto them on his right hand, Come ye bleſſed of my father, inherit the kingdom prepared for you from the foundation of the world: For I was an hungered, and ye gave me meat; I was thirſty, and ye gave me drink; I was a ſtranger, and ye took me in; naked, and ye clothed me; I was ſick, and ye viſited me; I was in priſon, and ye came unto me. And inaſmuch as ye have done it to one of the leaſt of theſe my brethren, ye have done it unto me." It is not neceſſary to underſtand this paſſage as a literal account of what will actually paſs on that day. Suppoſing it only a ſcenical deſcription of the rules and principles by which the Supreme Arbiter of our deſtiny will regulate his deciſions, it conveys the ſame leſſon to us; it equally demonſtrates of how great value and importance theſe duties in the ſight of God are, and what ſtreſs will be laid upon them. The apoſtles alſo deſcribe this virtue as propitiating the divine favour in an eminent degree. And theſe recommendations have produced their effect. It does not appear that, before the times of Chriſtianity, an infirmary, hoſpital, or public charity of any kind, exiſted in the world; whereas moſt countries in Chriſtendom have long abounded with theſe inſtitutions. To which may be added, that a ſpirit of private liberality ſeems to flouriſh amidſt the decay of many other virtues: not to mention the legal proviſion for the poor, which obtains in this country, and which was unknown and unthought of by the moſt poliſhed nations of antiquity.

St Paul adds upon the ſubject an excellent direction; and which is practicable by all who have any thing to give. "Upon the firſt day of the week (or any other ſtated time) let every one of you lay by in ſtore, as God hath proſpered him." By which the apoſtle may be underſtood to recommend what is the very thing wanting with moſt men, *the being charitable upon a plan;* that is, from a deliberate compariſon of our fortunes with the reaſonable expences and expectations of our families, to compute what we can ſpare, and to lay by ſo much for charitable purpoſes, in ſome mode or other. The mode will be a conſideration afterwards.

The effect which Chriſtianity produced upon ſome of its converts, was ſuch as might be looked for from a divine religion coming with full force and miraculous evidence upon the conſciences of mankind. It overwhelmed all worldly conſiderations in the expectation of a more important exiſtence. "And the multitude of them that believed were of one heart and of one ſoul; neither ſaid any of them that aught of the things which he poſſeſſed was his own; but they had all things in common.—Neither was there any among them that lacked; for as many as were poſſeſſors of lands or houſes ſold them, and brought the prices of the things that were ſold, and laid them down at the apoſtles feet; and diſtribution was made unto every man according as he had need." Acts iv. 32. Charity.

Nevertheleſs, this community of goods, however it manifeſted the ſincere zeal of the primitive Chriſtians, is no precedent for our imitation. It was confined to the church at Jeruſalem; continued not long there; was never enjoined upon any (Acts v. 4.); and, although it might ſuit with the particular circumſtances of a ſmall and ſelect ſociety, is altogether impracticable in a large and mixed community.

The conduct of the apoſtles upon the occaſion deſerves to be noticed. Their followers laid down their fortunes at their feet: but ſo far were they from taking advantage of this unlimited confidence to enrich themſelves or eſtabliſh their authority, that they ſoon after got rid of this buſineſs as inconſiſtent with the main object of their miſſion, and transferred the cuſtody and management of the public fund to deacons elected to that office by the people at large (Acts vi.)

There are three kinds of charity, our author obſerves, which prefer a claim to attention.

1. The firſt, and apparently one of the beſt, is to give ſtated and conſiderable ſums, by way of penſion or annuity to individuals or families, with whoſe behaviour and diſtreſs we ourſelves are acquainted. In ſpeaking of conſiderable ſums, it is meant only, that five pounds, or any other ſum, given at once or divided amongſt five or fewer families, will do more good than the ſame ſum diſtributed amongſt a greater number in ſhillings or half crowns; and that, becauſe it is more likely to be properly applied by the perſons who receive it. A poor fellow who can find no better uſe for a ſhilling than to drink his benefactor's health, and purchaſe half an hour's recreation for himſelf, would hardly break into a guinea for any ſuch purpoſe, or be ſo improvident as not to lay it by for an occaſion of importance, for his rent, his clothing, fuel, or ſtock of winter's proviſion. It is a ſtill greater recommendation of this kind of charity, that penſions and annuities, which are paid regularly, and can be expected at the time, are the only way by which we can prevent one part of a poor man's ſufferings, the dread of want.

2. But as this kind of charity ſuppoſes that proper objects of ſuch expenſive benefactions fall within our private knowledge and obſervation, which does not happen to all, a ſecond method of doing good, which is in every one's power who has the money to ſpare, is by ſubſcription to public charities. Public charities admit of this argument in their favour, that your money goes farther towards attaining the end for which it is given, than it can do by any private and ſeparate beneficence. A guinea, for example, contributed to an infirmary, becomes the means of providing one patient, at leaſt, with a phyſician, ſurgeon, apothecary, with medicine, diet, lodging, and ſuitable attendance; which is not the tenth part of what the ſame aſſiſtance, if it could be procured at all, would coſt to a ſick perſon or family in any other ſituation.

3. The laſt, and, compared with the former, the loweſt exertion of benevolence, is in the relief of beggars. Nevertheleſs, the indiſcriminate rejection of all who implore our alms, in this way, is by no means ap-